

The

CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXVI

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Number 5

● **BUILDINGS**

● **HIGHWAYS**

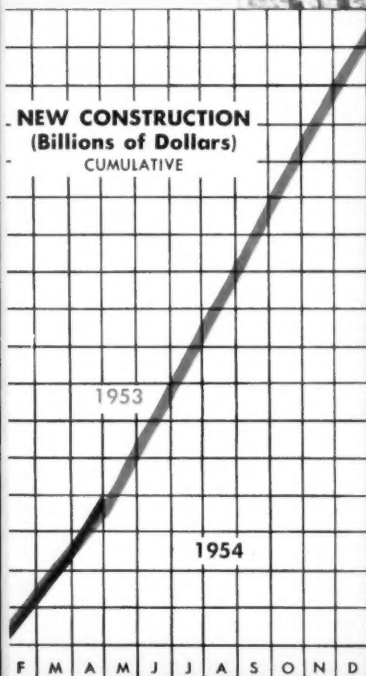
● **AIRPORTS**

● **RAILROADS**

PUBLIC WORKS



NEW CONSTRUCTION
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CUMULATIVE



Judicial Review Bill Passed by Congress—25

Billion-Dollar Highway Measure Enacted—55

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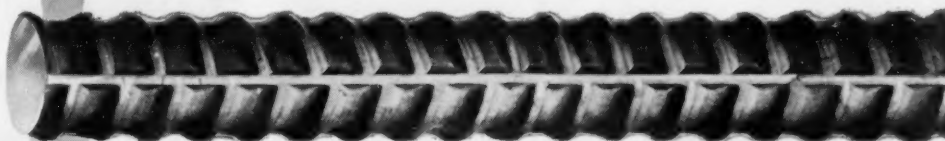
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Precast Bridge 2 Miles Long

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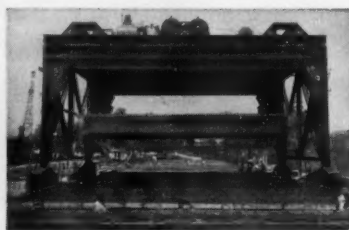
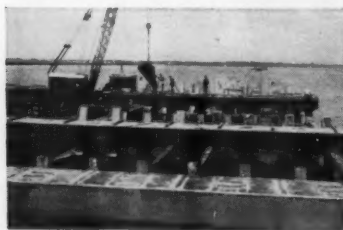
STATE OF MISSISSIPPI—Toll Project No. 1 (Contract No. 1)

BAY ST. LOUIS BRIDGE, between Bay St. Louis and Henderson Point

Supervision: MISSISSIPPI STATE HIGHWAY DEPARTMENT

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The CONSTRUCTOR

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COVER

Snow melting systems are installed in access ramps leading to the new \$25 million Boston Aerial Highway, making it the largest snow melting installation anywhere. More than 200 tons of wrought iron pipe is being used, through which will circulate heated water mixed with anti-freeze. (A. M. Byers Co. photo)

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Clearing dam site near Columbus, Indiana



JOB-ENGINEERED FINANCE PLANS



A half-mile-long dam—600 feet wide at the base, 40 feet wide at the top—will soon create a 400-acre lake near Columbus, Indiana, for thousands of summer vacationists.

Contractor for the Grandview Lake Development Co. is the Force Construction Company of Columbus. Faced with a mammoth job, Force came to C.I.T. Corporation for an equipment finance plan. Mr. Force

reports that "I didn't have the work fleet to take on big contracts until C.I.T. financed my new equipment. Now I'll be able to bid on larger jobs."

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IN CANADA: CANADIAN ACCEPTANCE CORPORATION LIMITED



S. 24 passed by Congress last month, assuring the right of judicial review of disputes arising under federal contracts. This legislation was scheduled to be sent to the White House early in May, after which time the President will have 10 days to sign it into law, or permit it to become law without his signature. (Page 25)

Federal-aid highway bill, which authorized a record \$1 billion annually for fiscal years 1955 and 1956, was passed last month by Congress. The act received congressional approval April 14 when both the House and Senate adopted a conference committee report reconciling differences between their separate measures and was signed by President Eisenhower on May 6. (Page 55)

Taft-Hartley Act amendments, in bill S. 2650, came before the Senate for debate on May 3. Democratic members of Senate Labor Committee earlier filed report recommending recommitment of the bill to the committee for further study. The A.F.L. Building and Construction Trades Department was seeking an amendment to take the construction industry out from under the act for a year or two while substitute legislation could be developed. (Page 36)

Appropriations keynote is economy as House passes seven of the 12 regular money bills. Aggregating \$40.6 billion, these House-approved bills are \$1.7 billion below Administration requests. Most of cuts represent "book-keeping changes" in the defense budget. Senate has not acted on any bills. (Page 30)

Construction volume, with its record-setting upward trend, represents the best news in the business world. The all-time high annual rate, sustained throughout the first four months of 1954, is generally recognized as the strongest single factor in bolstering the national economy during the current period of slackened overall business activity. (Page 7)

Lease-purchase legislation, which authorizes the federal government to secure post offices and other public buildings on an installment plan in lieu of rent, was passed by the Senate last month and sent to conference to compromise differences with a House measure. If legislation becomes law,

a construction market would be opened up for public buildings to be financed by private capital and purchased by the government on time payments. (Page 40)

A.G.C. Executive Committee was scheduled to meet at national office, May 10-11 with President John MacLeod presiding. Committee agenda called for careful review of association's program, national developments and current session of Congress.

Tax revision bill, which will probably be passed by Congress this session, has been described as "one of the most important, the largest, and the most comprehensive legislative measures" ever to come before the nation's lawmakers. The bill rewrites the Internal Revenue Code for the first time since it was passed in 1875. Included are 8,023 revisions of the federal law. (Page 28)

Contract method for TVA work was urged last month by immediate A.G.C. Past President C. P. Street who presented testimony to a subcommittee of the Senate Appropriations Committee in support of the A.G.C.'s proposed amendment to the TVA appropriation bill limiting the amount of money that the agency can spend on force account work. (Page 32)

Administration's housing bill, which passed the House last month, has been shelved temporarily by the Senate Banking and Currency Committee pending the alleged scandals in the Federal Housing Administration (page 39.) Announcement by the Administration that it was investigating possible wrong doings by FHA officials touched off congressional investigations involving three Senate committees by the end of April. (Page 23)

A.G.C. President John MacLeod told the Construction Industry Safety School in Memphis that a management failing to control accidents "cannot escape the reckoning which will invariably follow." Accidents should be controlled if for no other reason than the humanitarian factor, he said. (Page 85)

Contract maintenance of highways is a growing business and is helping many states solve their maintenance problems with economy, speed and effi-

ciency, according to the final report of the 1952 contract maintenance operations of the states compiled by the A.A.S.H.O. (Page 50)

Ranking Labor Department officials to take office last month were Arthur Larson, former dean of the University of Pittsburgh Law School, new Undersecretary of Labor and Paul E. Gurske, former chairman of the Oregon State Industrial Accident Commission named director of the department's Bureau of Labor Standards. (Page 46)

State governments' finances, which have been rising steadily since the end of World War II, continued the upward trend during fiscal 1953, the Bureau of the Census reports. All forms of state revenues amounted to \$17,979 million (6% over 1952) in addition to borrowings of \$1,351 million for a total of \$19,330 million. Capital outlay, primarily for contract construction, amounted to \$2,847 million, or one-sixth of total expenditures, the survey disclosed. This was up 7% over last year.



St. Lawrence Seaway got a new lease on life when the House Rules Committee, by a vote of 7-5, sent the \$105-million bill to the House floor where it was expected to be voted on early this month. The Senate has already passed a similar bill which would permit the U. S. to join Canada in constructing the seaway. (Page 31)

Upper Colorado reclamation project, which has been authorized with a \$1 billion limitation by House Interior subcommittee, is now being considered by the full Interior Committee. The project includes the Echo Park Dam in the Dinosaur National Monument, the larger Glen Canyon Dam, and 11 participating irrigation and power projects in Colorado, New Mexico, Utah and Wyoming.

Martin W. Watson, Past President of The Associated General Contractors of America, has been asked by Clem D. Johnston, newly-installed president of the Chamber of Commerce, to take chairmanship of the Chamber's Construction and Civic Development Department Committee. Mr. Watson, a director of the Chamber, has been a member of the department committee and chairman of a subcommittee on public works.



NEW STORE FRONT

—an asset 
not a liability 

When you handle a job calling for a new store front, you naturally want it done right. You want to be sure the installation will be an asset, not a liability . . . a money-maker instead of a lemon . . . for both your client and yourself.

Smart builders who won't risk profit and reputation on an ordinary installation know they can rely on *The Kawneer Touch* for store fronts that are right.

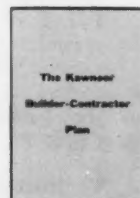
They know that *The Kawneer Touch* is a customer-pleasing profit-building combination of superior Kawneer store front products. The complete Kawneer line includes welded and bolted doors, glass holding sash and trim, fire-glazed colors on Zourite aluminum facing and

sun-control products to protect merchandise and shoppers. When these products are installed with the outstanding precision and skill of a Kawneer Installing Dealer, the result is a store front that is an asset . . . one that has *The Kawneer Touch*.

You will please your customers, enhance your reputation as a builder, and make added profits, even during the so-called "Off-Season", when you let *The Kawneer Touch* help you with store front jobs.

Ask your favorite Kawneer Installing Dealer to explain the "Kawneer Contractor Plan". He is listed under "Store Fronts" in the classified pages of your telephone directory. Call him today, or write Kawneer, Niles, Michigan.

The "Kawneer-Contractor Plan" is designed to help you make more profit.



This grocery made contractor profits.



This food store has had *The Kawneer Touch*.



There's money for you in jobs like this.



Kawneer will help you do jobs like this.

Construction Industry Continues to Furnish Best Business News

» THE BEST NEWS in the business world continues to be that of construction activity. The record-setting upward trend of construction was sustained throughout the first four months of 1954, and this is generally recognized as the strongest single factor in bolstering the national economy during the current period of slackened over-all business activity.

After the all-time high annual volume of new construction in 1953, amounting to \$34.8 billion, the early forecast for the construction industry for this year was for a slightly reduced rate of activity. A survey by the Department of Labor and the Department of Commerce indicated a new construction volume of about \$34 billion this year, 2 per cent below the figure for last year.

This outlook, however, has undergone some upward revision in the light of actual developments during the first four months of 1954. Construction activity has been running consistently ahead of the forecast since the first of the year. During the first quarter, after adjustment for seasonal factors, it was at an annual rate of \$36.1 billion, more than \$2 billion higher than the \$34 billion forecast, and also well above the record volume of last year.

The high trend then continued through April, according to preliminary figures for the month. The four-month total of new construction was estimated at \$10.095 billion by the Departments of Labor and Commerce, 2 per cent more than the volume for the corresponding months of 1953, \$9.9 billion.

Dodge Reports Confirm Trend

Reports of the F. W. Dodge Corporation on contract awards in the 37 states covered in its surveys confirm the high level of construction activity indicated by government estimates. The Dodge figures for the first quarter, and for separate months, are unprecedented in the company's 63-year history.

High-lights of the Dodge reports follow:

- March contract awards reported were the highest for that month in Dodge's history.
- March rounded out the highest first quarter recorded by Dodge.
- New highs were set for March

and for the first quarter in each basic Dodge category: nonresidential, residential, and public works and utilities.

• March was the seventh month out of the last 12 to set new high records for the respective months.

Thomas S. Holden, Dodge vice chairman, made this statement in connection with the first-quarter reports:

"It became clear to economists last fall that the strength of Dodge Reports totals during that period foreshadowed a great height of construction activity during the first quarter of 1954 as reported April 6 by the Department of Commerce.

"It may now be said likewise that the record-breaking total of the Dodge figures for the first quarter of this year foreshadow some very bright and booming records of construction activity in the months ahead as the contracts reported are carried out and the construction is put in place.

"The dollar that is paid to the bricklayer next June on a contract that Dodge reported in March will be in the hands of his wife's hairdresser the day before July 4. The dollar that is paid to the steelworker or the railroad man for making and hauling a girder in May will pass through the hands of many people before June is gone. And construction's pay-out is in terms of billions per quarter."

Dodge reported that of 12 basic percentage changes stated to its clients each month, all 12 for March and for the cumulative months of the year are plus. This event, the firm adds, did not occur in any month of 1953, which was the biggest year of Dodge totals. Nor was it true in January and February of this year, although each of those months set a new high in Dodge records, and together they set a new high for the two-month period.

Capital Outlays Relatively High

Construction is not the only encouraging factor in the business outlook. Expenditures by business for new plant and equipment, another important economic barometer, also continues relatively high, at a rate almost equal to that of 1953, according to the annual survey of capital budgets by the Securities and Exchange Commission and the Department of Commerce. The survey of capital investment scheduled for this year shows

a total of \$27.2 billion, only 4 per cent under last year, and above 1952. (April *CONSTRUCTOR*.) To this evidence of confidence in the future of business the *Federal Reserve Bulletin* adds the information that capital outlays of state and local governments for new construction activity, which exceeded \$7 billion in 1953, are expected to show some further growth during 1954.

General Business Conditions

Business activity in general continued to ease during the first quarter, but there were diverse movements in various sectors of the economy, according to the Office of Business Economics of the Department of Commerce. Total production, seasonally adjusted, moved downward during March, but improvement was reported in some sectors. Motor vehicle production in March was above February, and the daily average output was higher than in the preceding month also in such other products as paperboard, television sets and crude petroleum. Steel production was lower in March than in February, but showed little further change from mid-March to mid-April. Personal income in the first two months of 1954, the latest for which data are available, was at a rate only moderately below the peak reached last summer. In February, the seasonally adjusted annual rate of personal income was \$283 billion. With the reduction in federal individual income taxes at the beginning of the year, disposable personal income is very close to the peak rate of last summer, and well above a year ago, the Office of Business Economics says.

Tax Revision a Business Help

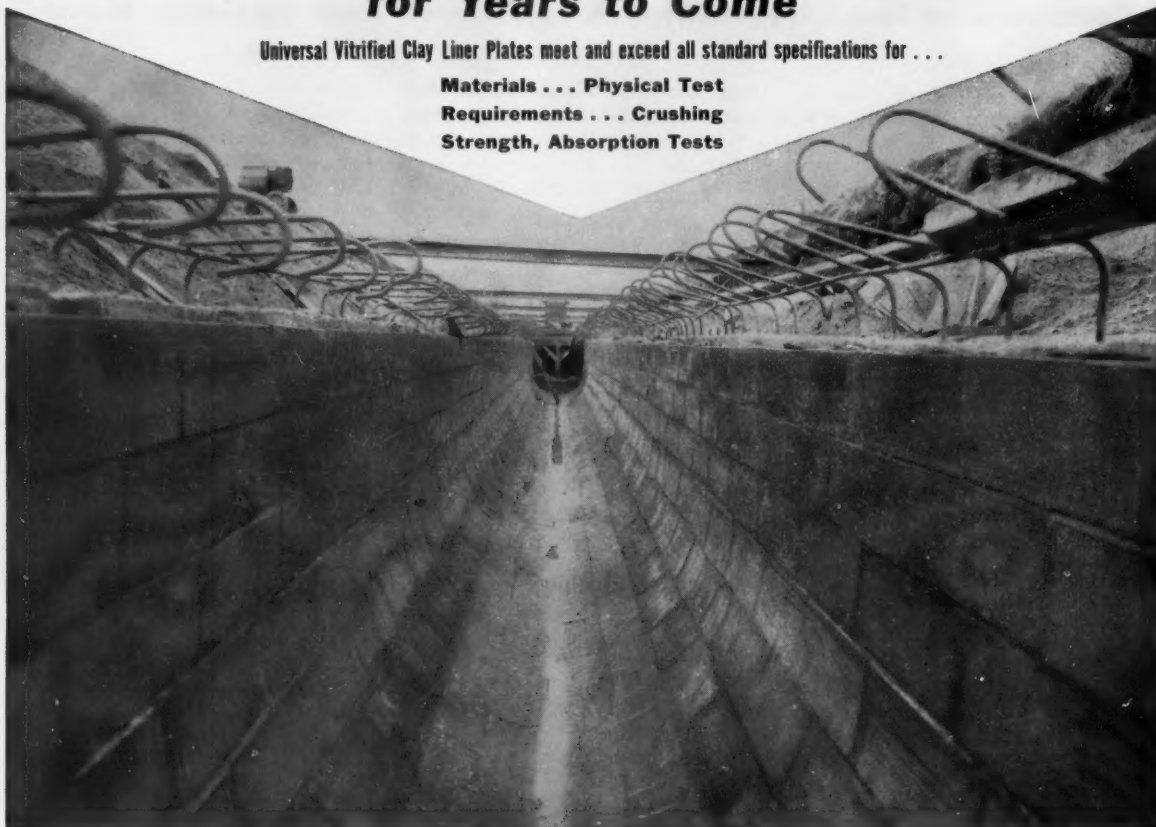
The tax revision bill pending in Congress will upon enactment "have a tremendously helpful effect upon the economy," Treasury Secretary George M. Humphrey told the American Society of Newspaper Editors in Washington April 15. "There are many business projects around the country which are being held up pending final decision on this revision bill," he said. "When the bill is enacted, these new or expanding businesses can go ahead with their plans, which will result in the creation of thousands of jobs and the vital expansion of our economy."

PERMANENT PROTECTION

for Years to Come

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A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for April stands at Index Number 422 according to the A.G.C. Index. The cost figure for April 1953 was 401. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 590 for April. One year ago the average stood at 557. The average prices paid by contractors for basic construction materials for April stand at Index

Number 310. The average a year ago stood at 297. The 1913 average, again, equals 100.

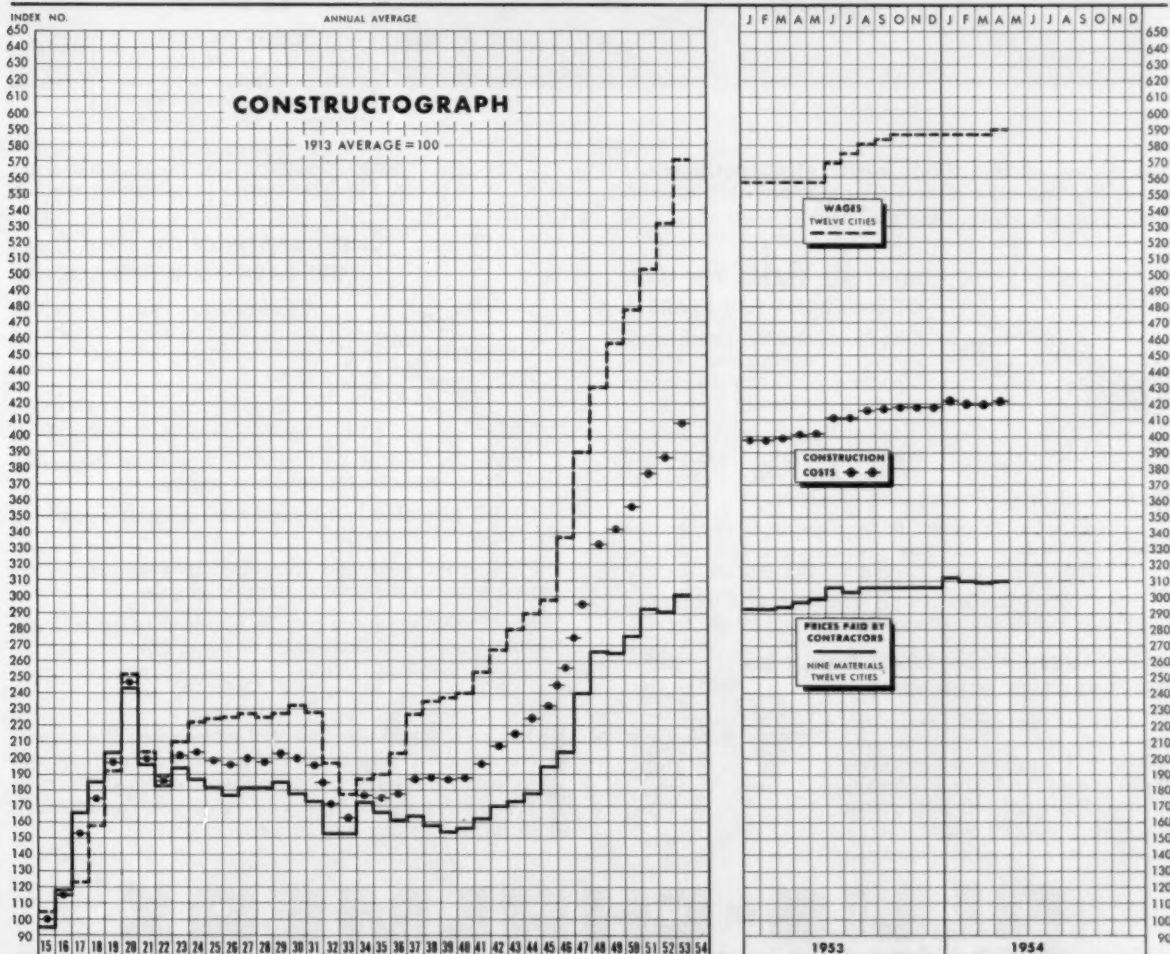
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during March (Index Number 275, based on 1936-38) is an increase of 54 points from February and an increase of 19 points from March 1953. (F. W. Dodge Corp.)

REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 17 weeks of 1954 totaled 10,286,059 cars. For the same period in 1953, loadings amounted to 11,839,975 cars. This represents a decrease of 13%.

● Wage, Material Price and Construction Cost Trends



HERE'S TRACTOR VALUE YOU CAN MEASURE

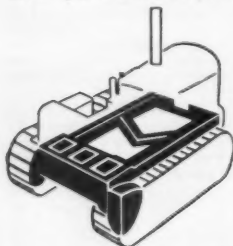
IN yards PER DAY... IN years OF SERVICE



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Six speeds forward to 5.7 mph.
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BUILT TO STAND THE GAFF OF DAILY USE FOR YEARS...

One-piece, welded main frame forms a continuous, strong backbone that means longer life for each tractor.

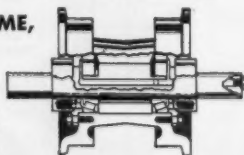
Oil-enclosed track release mechanism keeps adjustment at required setting and reduces track maintenance and breakage.

Smooth, efficient power train gives extra life, greater ability to absorb the punishment of tough jobs for every gear, shaft and bearing in the tractor.

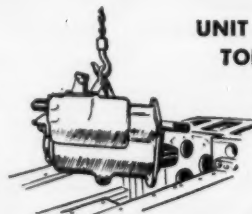
A-type truck frames permit free track oscillation and eliminate twists and strains caused by rough terrain.

EASIER LUBRICATION SAVES TIME, HELPS PROTECT EQUIPMENT

Lubrication period of 1,000 hours for final drives, truck wheels, idlers and support rollers saves both grease and time. Spring-loaded, Positive Seals keep grease in, keep dust and water out.



Fewer, more accessible lubrication points make short work of a chore. No lube points at all under tractor.



UNIT CONSTRUCTION PUTS TRAC- TORS BACK TO WORK SOONER

Transmission can be removed as a unit without removing clutch, final drive or bevel gear.

Engine can be removed without disassembling clutch.

Truck frame can be dismantled without removing final drive, sprocket or equalizer spring.

Clutch assembly can be removed without disturbing engine or transmission.

Final drive gear and intermediate gear can be removed without disturbing steering clutch.

Each steering clutch can be removed independently without disturbing final drive or bevel gear.

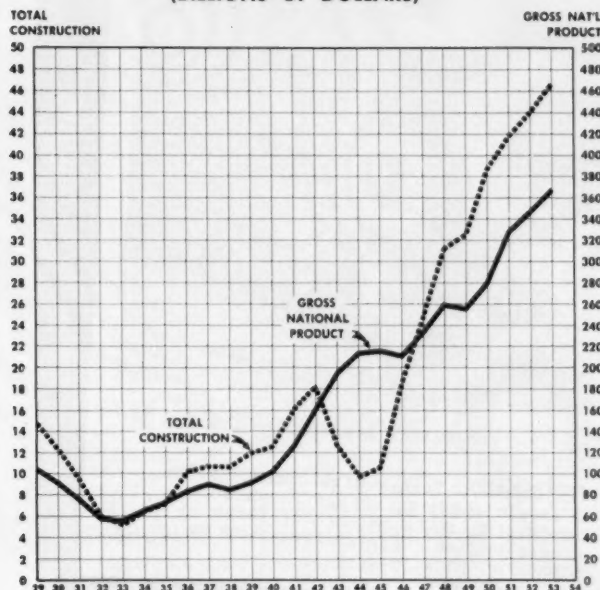
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Let your distributor tell you more about the rugged construction, ease of servicing and outstanding performance ability of the Allis-Chalmers HD-9 Tractor. It's a story that adds up to value you can measure in yards per day and in years of service.

ALLIS-CHALMERS

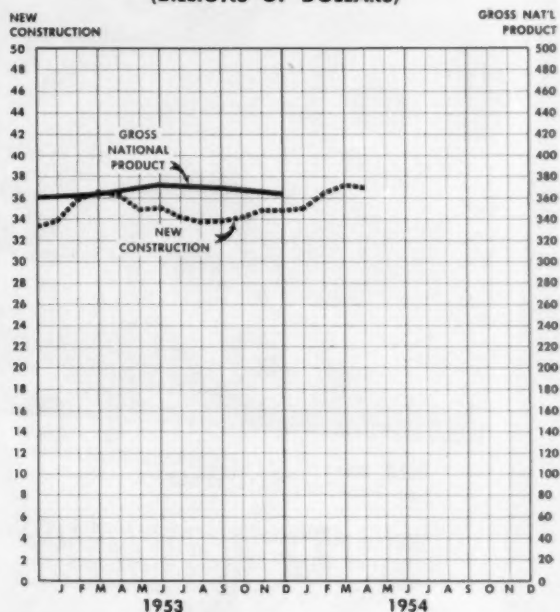
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

● **TOTAL Construction Compared with Gross National Product**
(BILLIONS OF DOLLARS)



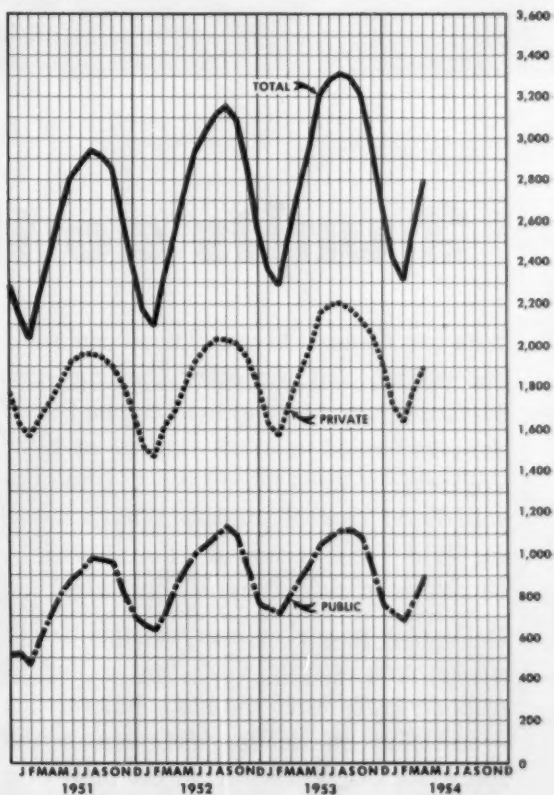
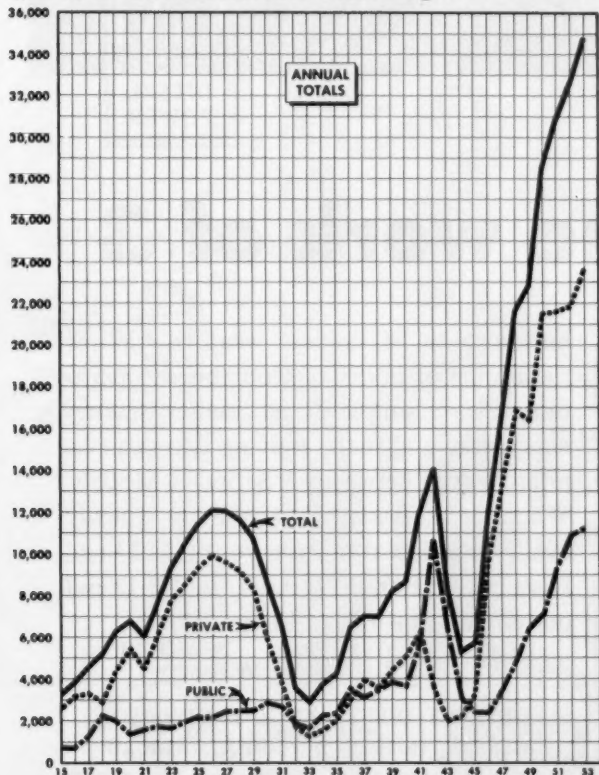
DATA SUPPLIED BY DEPT. OF COMMERCE

● **NEW Construction Compared with Gross National Product***
(BILLIONS OF DOLLARS)



* Seasonally adjusted at an annual rate

● **New Construction Activity (MILLIONS OF DOLLARS)**



DATA SUPPLIED BY DEPTS. OF COMMERCE AND LABOR

GM DIESEL
CASE HISTORY NO. 541-61



USER: Bert C. Altfillisch, Contractor,
Los Angeles, California.

INSTALLATION: 12 General Motors Diesel
engines powering 6 HD-19 and 2 HD-20
Allis-Chalmers tractors and two
Twin-Engine Euclid scrapers on flood

control project in Los Angeles County,
California.

PERFORMANCE: Twin-engine "Eucs," with
4 wheels driving, scrape 23-yard
loads. Two units do work of three
single-engine rigs, and required no
pusher on this job.

It Pays to STANDARDIZE on

available in more than 750 models of equipment built by over 150 manufacturers.



2 units do the work of 3

With two General Motors Diesel engines—one pulling and the other pushing—two 24-yard (heaped rating) twin-engine Euclid scrapers hauled as much yardage as three single-engine units did on this 1½-million-yard flood control project. What's more, the GM Diesel-powered "Eucs" scraped 40 tons in a single pass *without a pusher*.

Delivering power at every piston downstroke, quick-acting GM 2-cycle Diesels respond faster when the blade hits the dirt—accelerate quicker for faster runs to the spreading site. They start at the push of a

button even in coldest weather—deliver thousands of hours of trouble-free operation. Clean, simple design makes maintenance easy and many moving parts can be interchanged between all Series 71 Models. When parts *are* needed, they're quickly available at low cost from your GM Diesel Distributor. For full details on GM Diesel power for your job, call him in today.

★ ★ ★

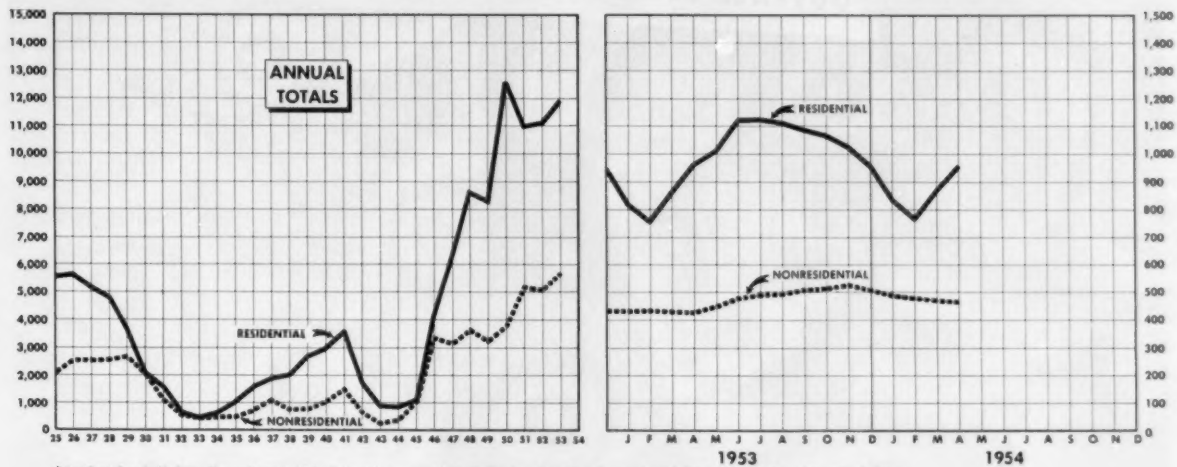
DETROIT DIESEL ENGINE DIVISION

GENERAL MOTORS • DETROIT 28, MICHIGAN

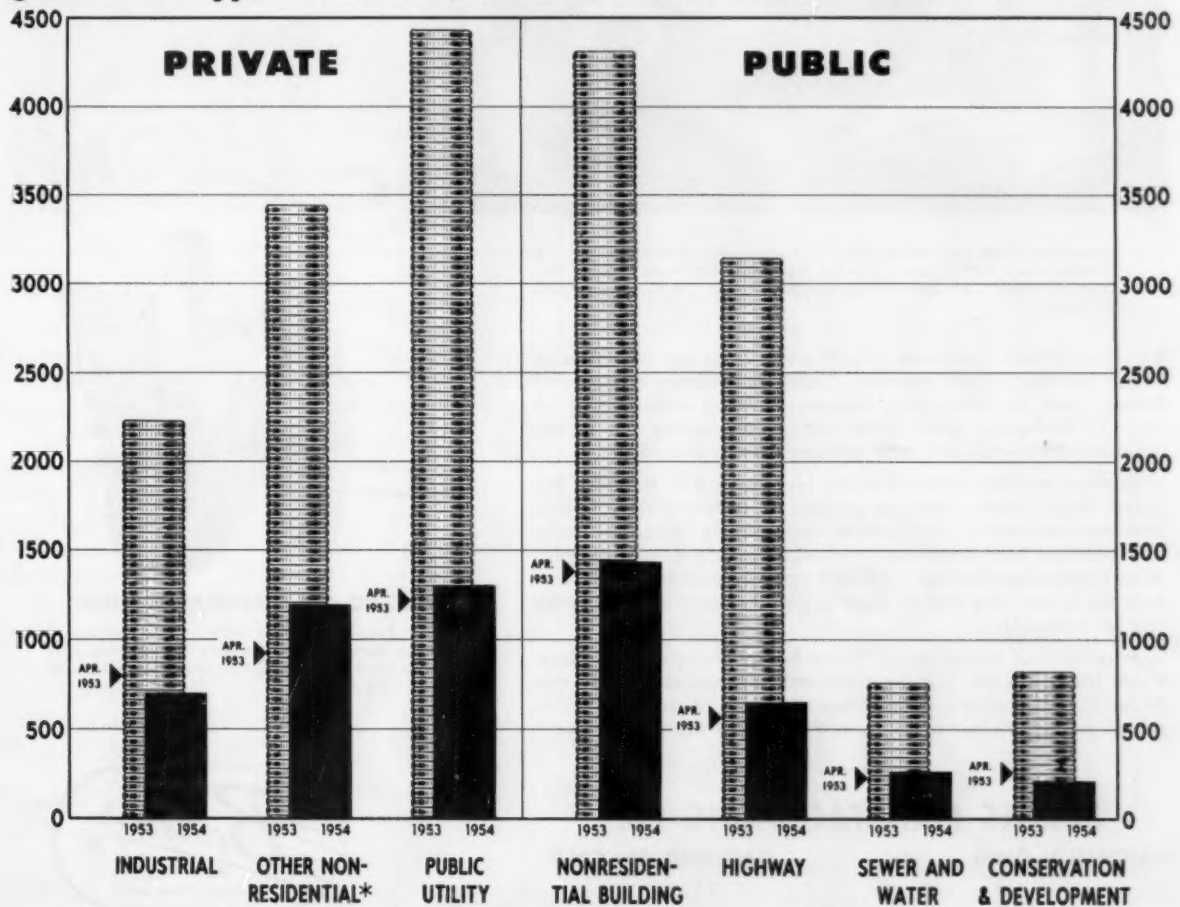
Single Engines... 16 to 275 H.P. Multiple Units... Up to 840 H.P.

NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building * (MILLIONS OF DOLLARS)



● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1953, 1954 VOLUME THROUGH APRIL



BARNES DIAPHRAGM PUMPS UNBEATABLE FOR HANDLING SEEPAGE AT HIGH LIFT ON CALIFORNIA OUTFALL SEWER TRENCH!

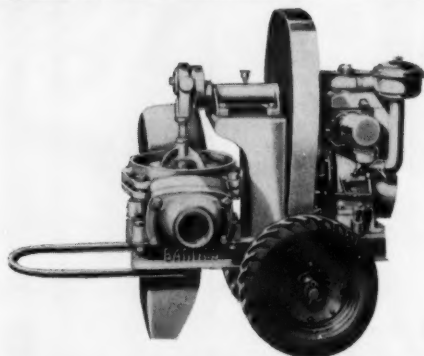


Step-down berm construction of the 14½-foot-deep sewer ditch on the Vukich-Brown outfall sewer job for Lancaster, California. Barnes Diaphragm Pumps work day and night to keep lower 10½ feet dry as pipe is installed.

Running 24-inch concrete sewer outfall across the Mojave Desert for the City of Lancaster, Calif., contractors Vukich and Brown used an interesting step-down berm construction of the 14½-foot-deep sewer ditch, which took away the superimposed overhead load and reduced trench bracing.

With the prevailing ground water level only 4 ft. beneath the desert floor, water seepage proved a constant threat. This problem was neatly, surely, and economically solved by using three Barnes 3-in. Diaphragm Pumps. Working day and night, these pumps handled up to 45,000 gallons of water per hour—kept the lower 10½ feet of ditch dry and permitted pipe to be laid on schedule.

Contractor Paul Vukich says, "These Barnes Pumps are the best made for our work. They're absolutely dependable. They run 24 hours a day at low cost, with a minimum of trouble. This is a high pump lift; but our Barnes Pumps are doing their job!"



BARNES BC 402 DIAPHRAGM PUMP

Ideal for handling seepage water. This is but one of the many pumps in the complete Barnes Line, with capacities up to 120,000 G.P.H. and pressures up to 600 ft. or 260 P.S.I.

BARNES MANUFACTURING CO.

MANSFIELD, OHIO

OAKLAND 21, CALIF.

★ ★ BUY THE BEST . . . BUY BARNES ★



For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

A slight decline in the price of food, apparel, and transportation between February and March brought the government's Consumer Price Index down 0.2% for the second month in a row, the Bureau of Labor Statistics reported.

The index currently stands at 114.8, which is 1.1% higher than a year ago, 12.8% above the pre-Korean level of June 1950, and 0.5% below the all-time high reached during October 1953.

Reflecting the cost of living for most of the nation's average income urban families, the price index for last month does not affect any major wage contracts.

The cost of food and apparel decreased 0.4% each, while transportation dropped 0.3%. Rents increased 0.1%, and medical and personal care and reading and recreation each advanced 0.2%.

Drops in the price of dairy products, meats and potatoes accounted for the lower food costs, while a decline in automobiles prices brought about lower transportation costs.

A BLS spokesman said that despite recent declines in prices there is nothing to indicate a serious depression, and added that there would be indications in the price index if the "bottom were going to drop out."

The Consumer Price Index, formerly calculated on the base 1935-39=100, was converted beginning last year to the new base 1947-49=100 in compliance with recommendations of the Bureau of the Budget.

A portion of this index below indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from January 15, 1952 to March 15, 1954.

They are presented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

Aside from the change of the base years, the revised index includes prices of about 300 items, compared to some 200 for the previous index. The "weight" assigned to items is now based on facts concerning family expenditures of wage earners and clerical workers found in a survey on consumer expenditures conducted by the bureau.

The first five cities in the table below are checked and reported on monthly. The other 15 cities are surveyed and their indexes published quarterly.

	1952			1953			1954		
	JAN.	FEB.	MAR.	JAN.	FEB.	MAR.	JAN.	FEB.	MAR.
Average.....	113.1	112.4	112.4	113.9	113.4	113.6	115.2	115.0	114.8
New York, N. Y.....	111.3	110.6	110.2	111.7	111.1	111.2	113.0	112.8	112.4
Chicago, Ill.....	114.0	112.7	113.2	114.2	113.9	113.8	116.7	116.7	116.7
Los Angeles, Calif.....	113.7	114.1	114.2	115.4	114.9	115.4	116.8	116.6	116.2
Philadelphia, Pa.....	113.5	112.4	112.9	114.3	113.7	114.1	115.3	115.2	114.9
Detroit, Mich.....	113.7	113.0	113.0	115.7	115.1	115.2	117.0	116.4	116.5
Atlanta, Ga.....	.....	115.1	.....	.....	.....	116.7	.....	.....	117.0
Baltimore, Md.....	.....	.....	112.3	.....	.....	114.2	.....	.....	114.8
Boston, Mass.....	111.8	114.1	111.2	112.1	.....	.....	112.7	.....	.....
Cincinnati, Ohio.....	111.8	111.1	111.3	.....	.....	112.6	.....	.....	114.2
Cleveland, Ohio.....	.....	112.6	.....	.....	112.5	.....	.....	115.2	.....
Houston, Texas.....	115.4	114.8	114.8	.....	116.1	.....	.....	116.9	.....
Kansas City, Mo.....	113.2	.....	.....	114.3	.....	.....	115.0	.....	.....
Minneapolis, Minn.....	.....	.....	113.5	114.4	.....	.....	116.6	.....	.....
Pittsburgh, Pa.....	113.1	112.3	111.9	112.6	.....	.....	114.4	.....	.....
Portland, Ore.....	114.9	.....	.....	114.6	.....	.....	115.4	.....	.....
St. Louis, Mo.....	.....	.....	114.0	.....	.....	114.7	.....	.....	116.9
San Francisco, Calif.....	.....	.....	113.0	.....	.....	115.5	.....	.....	116.5
Scranton, Pa.....	.....	110.8	.....	.....	112.2	.....	.....	113.2	.....
Seattle, Wash.....	.....	114.3	.....	.....	114.6	.....	.....	116.2	.....
Washington, D. C.....	.....	112.0	.....	.....	113.0	.....	.....	114.1	.....

"Euc" Scrapers

belong in your profit picture



Struck capacities of 12 and 15.5 cubic yards

Euclid Scrapers have profit-making features that pay off in high production at low cost. Owners know from experience that they get more pay yards per hour with lower operating and maintenance cost, and that means low cost per yard.

They know, too, that "Euc" Scrapers have unequalled job availability because of their simple, rugged design and easy servicing. For example, there's no down time due to cable breakage because all scraper operations are lever actuated

and independent . . . and the adjustable, long-life cutting blade with four identical and reversible sections assures peak production in all types of material from sand to sticky clay.

For performance and production data on work similar to yours, have your Euclid distributor provide helpful facts and figures on "Euc" Scrapers and see the new color movie, "Equation for Profit" that shows how "Eucs" can improve the profit picture on your earth moving work.

EUCLID DIVISION GENERAL MOTORS CORPORATION, Cleveland 17, Ohio



Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE



Performance Pays Off in Low Cost Production



Working on a highway relocation job in Arkansas for contractor D. B. Hill, "Euc" Scrapers of 12 cu. yd. struck capacity spread their loads on the run. Time saved in loading, speed on the haul, and fast dumping on the fill cuts down cycle time, steps up production.



▲ A fleet of nine 15.5 yd. "Euc" Scrapers helped rush a big plant-site grading job in Kentucky to completion ahead of schedule. They maintained high hourly production because of their fast travel speed with heaped loads up to 21 cubic yards on hauls averaging 1,950 feet.

◀ Fast, easy loading with more pounds of payload than other equipment of comparable size on many competitive demonstrations has made Euclid Scrapers the first choice of contractors and an important part of their profit picture.

**High production
with one man
and one machine!**

Western Contracting Corp. found the Twin-Power Scraper a versatile machine for their work on the Ohio Turnpike. On one section, carrying average loads of 23 cu. yds., a complete 4700' cycle was made in only 5.3 minutes. Top extensions increased the struck capacity to 21 cu. yds.

**Only Euclid builds a
Twin-Power Scraper**



Before you invest in any earth moving equipment, check with your Euclid distributor and be sure to see the new scraper film "Equation for Profit".

EUCLID DIVISION GENERAL MOTORS CORPORATION
Cleveland 17, Ohio

To The Owner and Architect—



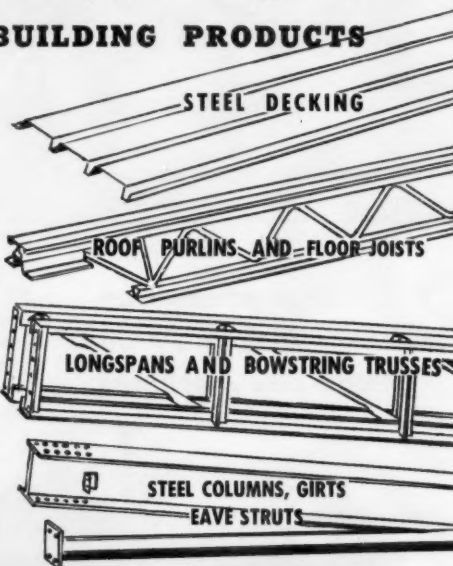
TO THE OWNER'S EXACT NEEDS

This is the **BASIC ADVANTAGE** when you design with
MACOMBER STANDARDIZED STEEL BUILDING PRODUCTS

TAKE THIS BUILDING FOR EXAMPLE — every structural member is a cataloged item — ready to be designed by an architect into a building to meet the exact needs of the owner. You have complete flexibility as to dimensions, load carrying capacity and building type to produce a modern structural design in harmony with other property structures.

Here is the low maintenance of masonry walls, an insulated steel deck with built-up roof, the fire-safety of STEEL and the economy of line production.

With the conventional framing members shown opposite or V-LOK Interlocking members you can build with MACOMBER.



Your Macomber Representative can give you detailed information and valuable suggestions. Call him.



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STEEL TRUSSES • STEEL DECK

MACOMBER INCORPORATED

CANTON 1, OHIO

• ENGINEERING • FABRICATING AND ERECTING •

Sidelights for Contractors

By John C. Hayes, Counsel

Hayes and Hayes, Munsey Building, Washington 4, D. C.

Taxes

Internal Revenue Code of 1954.—

The general revision of the internal revenue laws now pending in Congress is basically designed as a tax relief bill and its overall net effect is expected to reduce taxes. However, in many instances the bill will close existing loopholes that have permitted tax savings, in such fields as corporate reorganizations and distributions. While much has been publicized about the proposed increased allowance and use of a simplified declining balance method of depreciation that will permit faster charge-offs during the earlier life of depreciable assets, it should not be overlooked that this method is limited to new facilities constructed or acquired after 1953. Under the proposed revision as passed by the House of Representatives, a purchase of an asset previously in use does not qualify it as new property.

Excise Tax Reduction Act of 1954.—

Effective April 1, 1954, this Act reduced the federal excise taxes on the following items (among others) to a 10% rate: furs, jewelry, luggage, toilet preparations, cameras, lenses and films, mechanical pens and pencils, and sporting goods. Also reduced to a 10% rate were excise taxes on local and long distance telephone calls, telegraph messages, safe deposit box leases, and transportation of persons. The rate on general admissions (including movies but excluding horse and dog races) was similarly reduced to 10% if the price exceeds 50¢ (through 50¢ an exemption applies). The former tax rate of 20% on club dues and fees continues to apply.

Joint Ventures.—While commenting that, taxwise, many husband-wife arrangements "justify raised eyebrows," a circuit court has held that a legally valid joint venture including members of a firm and their lady relatives cannot be disregarded by the Tax Court and the profits taxed only to the firm members without an explicit finding of a lack of "good faith." Here the ladies had performed no services nor contrib-

uted any capital to the joint venture but had assumed their share of the financial risks, which the higher court considered to be a substantial contribution under the facts.

State Use Tax.—The Supreme Court has ruled that a Delaware merchant who sells goods in Delaware to Maryland residents, and whose only contacts with Maryland are in general advertising and in delivering purchases therein by its own trucks or common carriers, cannot be required to collect and remit the purchasers' use tax to Maryland. "Due process requires some definite link, some minimum connection, between a state and the person, property or transaction it seeks to tax."

Reasonable Compensation.—A construction company has been upheld by a circuit court in deducting as ordinary and necessary expenses the full amount of salaries paid to its officer-stockholders, where the reasonableness thereof was supported by competent witnesses. Since the testimony in behalf of the officers was uncontradicted and unimpeached, the circuit court stated that the Tax Court had erred in ignoring this evidence and in determining the propriety of the amount of salaries upon its own innate conception of reasonableness.

Prepaid Rent.—Regardless of whether a landlord is on the cash or accrual basis of accounting, it is generally held that advance rents paid to him without restriction are taxable income when received. A circuit court ruled further that prepaid rent, received by a landlord selling the property and credited by him to the purchase price, constituted income to the buyer rather than a reduction in the purchase price, where such seemed to be the commercial intent of the parties and the rents had not been earned but only collected at the time of closing title.

Gift Tax.—The Tax Court held that taxable gifts resulted where stockholders owning 40% of the stock of a family corporation transferred real

property thereto in two successive years without consideration. Only one exclusion from gift tax was allowed each donor for each of the two years, rather than one for each of the eleven non-contributing stockholders, since the gift was to the corporation.

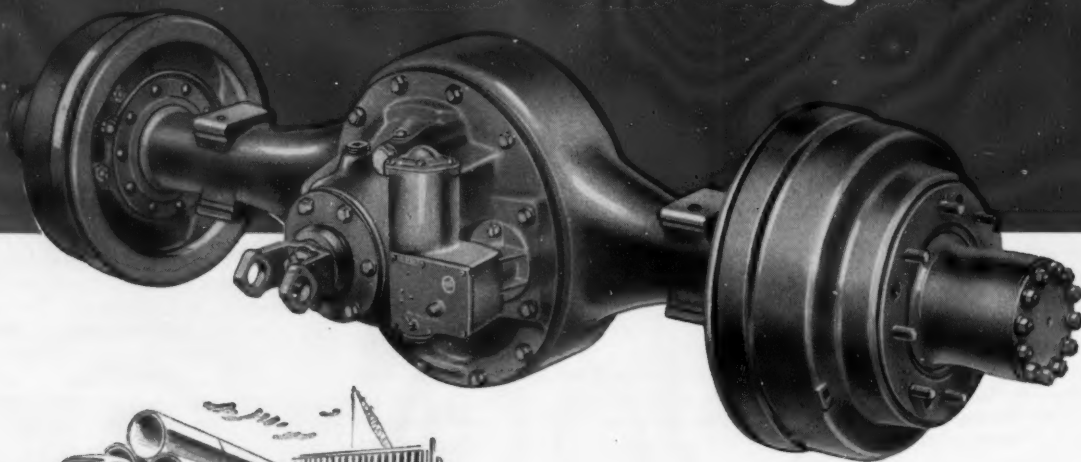
Public Contracts

Subcontractor's Bond.—A district court held that an unpaid materialman furnishing supplies to a government subcontractor is entitled to recover as a donee third party beneficiary against the surety on the subcontractor's bond, where the circumstances indicated that the bond was intended to secure both performance and payment. The court felt that the judicial trend is toward the liberal view that a bond guaranteeing faithful performance of a subcontract to furnish labor and materials implies a promise to pay therefor.

Vacation and Holiday Pay.—Under a contract obligating the government to pay all direct costs, plus 100% of direct labor costs to cover "all overhead, direct charges, and other elements of cost," and providing that labor shall be charged to the contract "in accordance with a sound accounting method consistently followed by the contractor," the comptroller general ruled that vacation and holiday payments by the contractor constituted overhead rather than direct labor cost. The ruling states that vacation and holiday pay is ordinarily classed by cost accountants as overhead, and that the contractor did not accrue such pay in his records but merely charged it to expense when and as paid.

Demurrage Charges.—A government contractor's financial inability to meet drafts attached to freight shipments is not adequate reason for granting relief from the penalty portion of demurrage charges, according to a decision by the Interstate Commerce Commission, although the contractor had been delayed in receiving contract payments needed to pay the drafts and it was the government which had insisted on continued performance.

Eaton 2-Speed Axles save engines, keep trucks on the job, reduce operating and maintenance costs, make trucks last longer



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Eaton 2-Speed Axles double the conventional number of gear ratios, enabling drivers to select a ratio to deliver pulling power or speed—the ratio best suited to road and load conditions. Engines operate in their most efficient and economical speed range, reducing stress and wear on engine and power transmitting parts, holding operating and maintenance costs to a minimum, adding thousands of miles to engine and over-all vehicle life. Eaton 2-Speed Axle trucks haul more, faster, longer, at lower cost—are worth more when traded in.

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AXLES

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EATON MANUFACTURING COMPANY
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Principle of Justice Restored

WHEN the President signs S. 24, as amended, and the bill becomes law, there will be restored a fundamental principle of American justice that the parties to a contract with the federal government may have judicial review of disputes which arise.

This principle temporarily had been suspended by the United States Supreme Court decision in the Wunderlich case on November 26, 1951. That case was the final one in a series in which the Supreme Court progressively limited the interpretation of the finality or disputes clause of government contracts.

In the Wunderlich case the Supreme Court limited judicial review of disputes arising from decisions of department heads only to cases in which fraud could be alleged and proved, and defined fraud as "conscious wrongdoing, an intention to cheat or be dishonest."

The Court itself suggested legislation in the majority opinion which stated: "The limitation upon the arbitral process is fraud, placed there by this court. If the standard of fraud that we adhere to is too limited, that is a matter for Congress."

There were two strong dissents which formed the basis for the subsequent legislation. Justice Douglas, with Justice Reed concurring, stated in part:

"We should allow the Court of Claims, the agency close to these disputes, to reverse an official whose conduct is plainly out of bounds whether he is fraudulent, perverse, captious, incompetent, or just palpably wrong. The rule we announce makes government oppressive. The rule the Court of Claims espouses gives a citizen justice even against his government."

Justice Jackson said: "Granted that the contracts are legal, it should not follow that one who takes a public contract puts himself wholly in the power of contracting officers and department heads. . . . I still believe that one should be allowed to have a judicial hearing before his business can be destroyed by administrative action, although the Court again thinks otherwise."

The Associated General Contractors of America was the first to call to the attention of Congress the need for such legislation as was passed in letters of January 5, 1952 to the chairmen of the Senate and House Judiciary Committees as soon as Congress convened. The association mobilized the support necessary for passage.

The A.G.C., in its testimony before the committees, pointed out that legislation was necessary for two reasons. One was that in view of the court's decision it was doubtful that a disputes clause giving protection to a contractor could be put into government contracts by administrative action. Second was that since 1926 the A.G.C. and other associations and professional societies in the industry had cooperated with many government interdepartmental committees seeking to draft a fair and equitable standard gov-

ernment construction contract form but the efforts had not been satisfactory to the industry.

It is not likely that the legislation will stimulate any great volume of cases going to the Court of Claims, because that is a costly and time-consuming process. But the legislation will be beneficial because contracting officers and department heads, realizing that their decisions can be subject to judicial review, will be more likely to give consideration to the contractor's claims.

The members of Congress who were primarily responsible for enactment of the legislation deserve the appreciation of the construction industry and other industries for restoring this principle of American justice.

Progress in Highway Financing

THE Federal-Aid Highway Act of 1954, passed last month, represents a new landmark in highway financing. The authorizations for the federal-aid systems total \$875 million a year, far exceeding any previous year.

It was evident from the course of the legislation that a better awareness of the urgent needs for highway construction, and of the vital importance of highway transportation to the national economy and the nation's security, has taken hold among members of Congress. The authorizations grew as the legislation went through the House and Senate. (Details on pages 55-57, 61.)

Federal highway financing needs to grow. The deficiencies in highway construction resulting from the virtual cessation of road building in the war years and inadequate provision of funds since then, together with the rapid increase in number of motor vehicles, have caused highway facilities to lag far behind ever-growing needs.

The Associated General Contractors of America has recognized for years the danger confronting the nation's highway system as a result of inadequate financial provisions. At its 35th annual convention in Los Angeles in March, the A.G.C. adopted a resolution recommending a minimum of \$900 million a year for federal aid to enable the federal government to "assume its proper responsibility for the nation's highway needs." The same minimum figure was advocated by the American Association of State Highway Officials.

It is gratifying that the new federal-aid authorizations come close to the minimum advocated by the A. G. C. and A.A.S.H.O., and Congress is to be congratulated on achieving real progress in the new act. Even so, the deficiencies will still loom large, and the increased authorizations, plus state matching and other state road expenditures, will not be sufficient to take up the slack at the present rate. It must be recognized, however, that some states might have difficulty in matching federal funds of much greater size than those authorized at this time. But from now on our highway problem must have more attention from federal, state and local governments.



THE LATEST DEVELOPMENTS IN HIGHWAY AND AIRPORT FORMS

● All paving forms should perform two distinct functions. First, they should accurately confine the limits of the pour, and, secondly, they must act as track, supporting and steering the massive machinery required to prepare the subgrade, spread, finish and cure the slab.

● The ability of Heltzel Forms to best fulfill these two basic functions is the big reason why they are preferred by leading contractors everywhere. For behind the Heltzel name is almost half-a-century leadership in the design and manufacture of steel forms. This "know-how"—has enabled Heltzel to constantly produce practical, workable, "form setter's" forms that set fast, align perfectly, hold steady and firm. And "Heltzel Built" means they're precision fabricated of special analysis carbon-manganese steel, pre-stressed to

withstand heaviest loads without failure.

● The form illustrated above is the latest design of the popular HELTZEL DUAL-DUTY FORM. (Two forms in one for two different slab thicknesses.) It features extra-wide, two-way stake pockets and restyled end supports which add up to the strongest form in the field. The triple-prong slide locking arrangement and single direction wedging gives form setters perfect alignment with a minimum of effort.

● This long experience and constant experimentation make it just common sense to see the Heltzel representative in your area before you purchase form equipment. If you don't already have a complete file of Heltzel Form literature, use the coupon below.

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Water Resources Hearings

Four public hearings were to be held on activities of the federal government in the fields of water resources and power generation and distribution by the Water Resources and Power Task Force of the Commission on Organization of the Executive Branch of the Government.

The task force was appointed by former President Herbert Hoover, chairman of the commission. Admiral Ben Moreell will preside at the task force hearings which will be held May 3 at San Francisco; May 17 at Denver; June 1 at Chattanooga; and June 14 at New York.

The task force was concerned with the water resources and power functions of the federal government including: improvements of rivers, harbors, and waterways for navigation; development of flood protection works; improvements for drainage, irrigation, land reclamation, water supply, pollution abatement, and recreation; and the generation, transmission and distribution of electric energy.

Watson Named Chairman

Martin W. Watson, Past President of The Associated General Contractors of America, has been asked by Clem D. Johnston, newly-installed president of the Chamber of Commerce of the United States, to take chairmanship of the Chamber's Construction and Civic Development Department Committee.

Mr. Watson is a director of the Chamber and has been a member of the department committee, serving as chairman of a subcommittee on public works.

Defense Materials System

A revised and simplified Defense Materials System has been put into effect by the Business and Defense Services Administration of the Commerce Department. The system channels materials to the current defense programs, and provides for an orderly and rapid expansion of military and Atomic Energy Commission production and construction in the event of emergency.

DMS Regulation 2, as amended April 1, relates specifically to construction under the system.

Housing Investigations Launched by Administration and Congress

- Three Congressional Committees Undertake Probes
- Mason Takes Over Duties of FHA Administrator

» THE announcement by the Administration on April 12 that it was investigating alleged scandals in the government housing program touched off Congressional investigations which involved three Senate committees by the end of the month.

The investigations were in two parts of the Federal Housing Administration's insured-mortgage program. Under the National Housing Act the FHA may insure loans for repair and improvement of houses and apartments. By the end of 1952 FHA had insured 14,321,172 property improvement loans totaling more than \$6 billion. "Serious irregularities and abuses" have been charged whereby home owners are charged exorbitant prices for "shoddy" work.

Apartment Charges

The other part being investigated is the apartment construction program under section 608 whereby FHA insures mortgages for multi-family structures. Albert M. Cole, head of the Housing and Home Finance Agency, stated that there was evidence of "illegal or unethical actions" in this part whereby some builders made "windfall" profits. By the end of 1952 FHA had insured 7,049 projects under this section for a total of \$2.4 billion.

In an executive order the President directed all agencies of the federal government, including the Federal Bureau of Investigation to cooperate with the HHFA and the Congressional committees in their investigations.

As the investigations got under way FHA Commissioner Guy T. O. Hollyday was fired. He was replaced by Norman T. Mason, North Chelmsford, Mass., treasurer of the William P. Proctor Lumber Co. Mr. Mason has been chairman of the Construction and Civic Development Department Committee of the Chamber of Commerce of the United States.

Senate Action

The Senate Banking and Currency Committee, headed by Senator Homer E. Capehart (R. Ind.), held a pre-

liminary investigation on the alleged scandals from April 19 to 29. It recessed the investigation until after the latest housing bill has been passed, and then intends to start a full scale investigation.

The Joint Committee on Reduction of Nonessential Federal Expenditures, headed by Senator Harry F. Byrd (D. Va.), has held a hearing and also has started an investigation, particularly on the FHA insurance of apartments.

The third Senate committee involved is the Appropriations Committee. Senator Leverett Saltonstall (R. Mass.) has stated that the subcommittee he heads will give careful study to the housing situation before any further appropriations are made to the housing agencies.

So far, no House committees have undertaken investigations, although there is the possibility that some of them may do so.

Acting FHA Commissioner Mason has also announced the appointment of a Review Committee to assist him in "determining legislative and administrative action needed in order to improve the programs and operations of FHA."

'Windfall Profits'


Internal Revenue Commissioner T. Coleman Andrews stated that the government may lose at least \$28 million as the result of "windfall" profits to builders under the rental housing program. He stated his agency is probing 1,149 cases where private corporations gained more than \$65 million in profits by borrowing more than they spent on FHA-insured projects.

He said the government stands to lose \$28 million in tax revenue because the builders filed returns on the \$65 million on a capital gains tax basis instead of on a normal income tax basis. He contends the "windfall" profits should be taxed as normal income.

Passage of the latest housing bill, probably during June, will be followed by an intensification of the investigations.

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WORLD'S BIGGEST POWERHOUSE
AT CHIEF JOSEPH DAM



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● Efficient forming methods on the Chief Joseph powerhouse are stepping up the concrete pouring pace from the scheduled 30,000-cu. yds. placed a month to 50,000-cu. yds. in that time to put the job 7% ahead of schedule! Pouring costs have been reduced by improved forming methods, including the use of Blaw-Knox steel panels 32 feet high which permit pours up to 70-ft. long in some of the massive solid walls. By re-using these forms, 80% of the concrete will be formed against the prefabbed panels.

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Contractors visiting the Chief Joseph project are impressed with the dramatic improvement of the Blaw-Knox prefabbed Steel Forms over older methods in such intricate places as draft tubes. This is another reason why it will pay you to call in Blaw-Knox engineers in the preliminary planning stages . . . to lick such difficult forming problems before they're on the drafting board! Whatever your job . . . dams, tunnels, bridges, sewers . . . take advantage of the Blaw-Knox Steel Forms Consultation Service. There's no obligation, so write, wire or phone Blaw-Knox today.

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» CONGRESS completed action April 29 on S. 24, as amended, assuring the right of judicial review of disputes arising under federal contracts.

The bill was to be sent to the White House early in May, and the President's signature was expected.

The House had passed the bill with amendments on April 26. The Senate concurred in the amendments on April 29, thereby completing Congressional action to offset the effects of the United States Supreme Court decision in the Wunderlich case announced on November 26, 1951.

Text of the bill as passed is:

Text of Bill

"That no provision of any contract entered into by the United States, relating to the finality or conclusiveness of any decision of the head of any department or agency or his duly authorized representative or board in a dispute involving a question arising under such contract, shall be pleaded in any suit now filed or to be filed as limiting judicial review of any such decision to cases where fraud by such official or his said representative or board is alleged: *Provided, however,* That any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or is not supported by substantial evidence.

"Sec. 2. No Government contract shall contain a provision making final on a question of law the decision of any administrative official, representative or board."

Title of the bill was amended to read: "An act to permit review of decisions of the heads of departments, or their representatives or boards, involving questions arising under government contracts."

Authors of the bill were Senator Pat McCarran (D. Nev.) and Representative Chauncey W. Reed (R. Ill.), chairman of the House Judiciary Committee. Rep. Louis E. Graham (R. Pa.) was chairman of the subcommittee which handled the bill in the House.

Bill Amended

The bill as finally enacted differs somewhat from the version which was originally passed by the Senate on June 8, 1953. Objections had been raised to the original bill by the Department of Defense. Substitute language, which proved to be acceptable to all parties concerned, was recom-

Congress Finally Passes S. 24, for Judicial Review of Disputes

- Senate Concurs in Amended Version by House
- A.G.C. Championed Remedy for Wunderlich Case

mended by the Comptroller General.

Senator McCarran, in moving that the Senate concur, stated:

"The language of the House bill, while quite different from the language approved by the Senate, is designed to accomplish the same purpose. It is my understanding that the Department of Defense takes the view that the House language will accomplish the same purpose as the Senate language. It is my further understanding that the Comptroller General of the United States has expressed complete satisfaction with the House language, and has declared that in his opinion it will accomplish the purposes sought to be served by the Senate language.

"As author of the Senate bill, I want to say that I am not sure that the House language gives protection as complete as that which would have been given under the language approved by the Senate. However, I am willing to go along with the House language, in view of the assurances which I have mentioned, and the further fact that so far as I know all others interested in this legislation are satisfied with the language approved by the House."

A.G.C. Led Fight

The Supreme Court, in its decision in the Wunderlich case, interpreted the disputes or finality clause of the standard government construction contract as limiting judicial review of decisions of department heads only to cases in which fraud by the government official could be alleged and proved. The court added: "By fraud we mean conscious wrongdoing, an intention to cheat or be dishonest."

The court itself suggested legislation by stating: "The limitation upon this arbitral process is fraud, placed there by this court. If the standard of fraud that we adhere to is too limited, that is a matter for Congress."

The Associated General Contractors of America made a thorough study of the subject after the Supreme Court decision, and on January 5, 1952, wrote to the chairmen of the Senate

and House Judiciary Committees, recommending principles for legislation to remedy the effects of the court decision and to restore the principle of justice that parties to a contract do have the right of judicial review of disputes.

On January 22 Senator McCarran, who was then chairman of the Senate Judiciary Committee, introduced S. 2487 which was the first bill offered on the subject. Two days later Rep. Emanuel Celler, then chairman of the House Judiciary Committee, introduced his bill.

Two-Year Effort

S. 2487 was eventually passed by the Senate. But the House, which had waited on the Senate, did not have time to act before adjournment and the bill died with the 82nd Congress.

In January 1953, at the start of the 83rd Congress, Senator McCarran and Rep. Reed, who had become chairman of the House committee, introduced identical bills, S. 24 and H. R. 1839. The Senate passed S. 24 in June, but again the House did not have time to act before adjournment.

The A.G.C. was the first group to recommend to Congress the principles for the legislation, and consistently was the leader in encouraging remedial action. The A.G.C. stated:

"On behalf of all contractors signing construction contracts with the federal government, we recommend that the Congress enact legislation which will establish by law beyond the possibility of doubt the fundamental principle of American justice that the parties to a contract with the federal government have the right of judicial review of disputes which arise.

"We believe that the legislation is in the public interest in that it will correct an inequity and restore justice to the parties to a government contract, and that it will encourage more economical construction by removing one of the hazards of contracting with the government."

The legislation, while it grew out of a court case involving construction, will apply to all government contracts when it becomes law.

Pictures of the month . . . by LeTourneau-Westinghouse . . .



Eliminates stockpile, plant-mix—"Seeding" sand over quarry rock is the primary job of Monarch Cement Company's D Tournapull, Humboldt, Kansas. Unit self-loads river-deposited material, then spreads controlled layers on limestone bank. Process builds up silica content so that pit shovel loads right mixture

for cement-making direct into rail cars. Former expensive stockpiling and plant-mix of silica and rock have been eliminated. Besides "seeding" sand, Tournapull also has time to build levee along nearby Grand River. On this job, D Tournapull regularly self-loads, delivers 68 loads (374 bank yards) per 8-hour day.



18-ton haulers turn like pick-ups

"Tournapull Rear-Dumps turn any place my little pick-up truck can," says works engineer for Dawson, Wade & Co, Vancouver. Company has 2 Rear-Dumps on their 2,128,000 yd Trans-Canada Hwy job near Golden, B.C. On 950 ft cycles, each delivers 11 yds every 4.3 min. This includes 2.0 to 3.3 min for shovel-loading.



35 mph over runway—With the concrete runway of Peoria Airport providing an ideal haul road, 4 Tournapulls moved 18,000 yds of topsoil and clay in 12 days (96 hrs) for Swords-McDougal Co of Peoria. Job consisted of building one taxiway 60 x 1,000 ft, another 60 x 2,000 ft, and a parking apron 150 x 285 ft. Hauls ranged from 2500 to 3000 ft one-way.



Clears 1 to 5 acres a day

—Clearing river-bottom jungle near Arcadia, Fla, Tournatractor Operator W. E. Miller says his job is, "The roughest I've been on and I've been clearing since 1932. You can't walk through it." Working continually in this very heavy growth, 186 hp Tournatractor cleared 1 to 2 acres a day. In lighter going, it cleared 4 to 5 acres a day.

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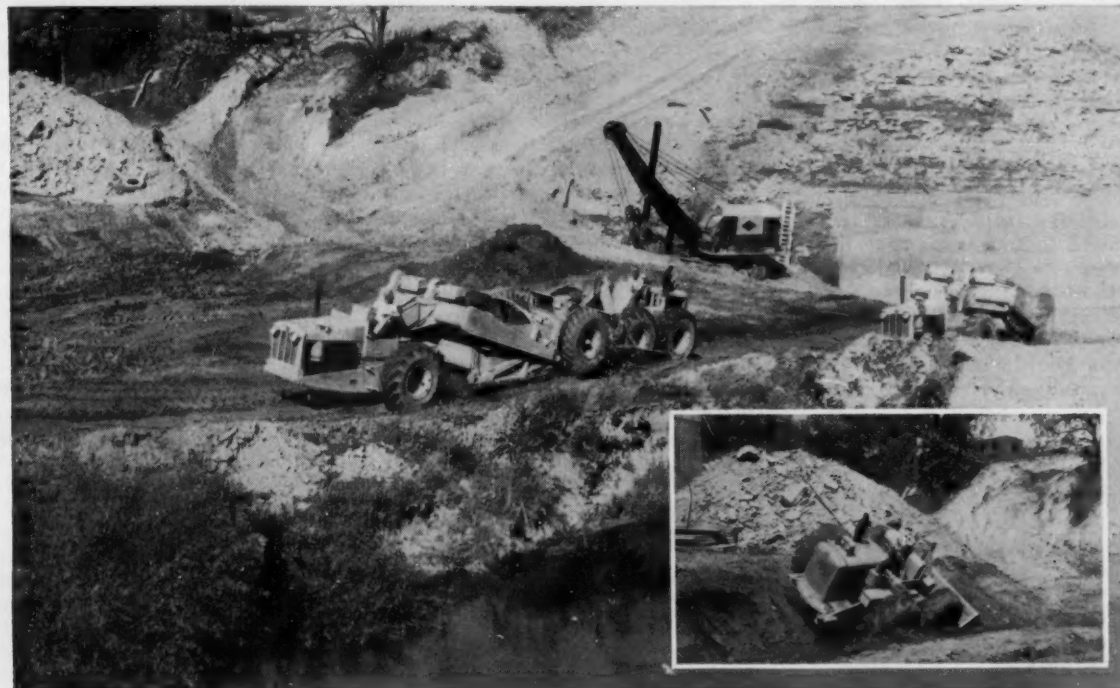
Speed Turnpike Extension — To speed their 7½ mile section of the Pennsylvania Turnpike's Delaware Extension, James D. Morrissey, Inc., Philadelphia, moved 1,600,000 yds of Class 1 dirt with the help of 9 C Tournapulls. Fingertip electric-control of scraper and steer reduced operator fatigue.



Easy to operate! — Used by the combine of Petrillo-Healy-Gammino on their Thruway contracts, this Tournatractor clears loading areas . . . also spreads on rock fills. In photo above, note operator's right hand. A finger touch on small lever changes gears instantly through constant-mesh transmission and torque converter. No clutching, no loss of vital momentum.



Tight squeeze — Filling 11-ft space between buildings, D Tournapull's maneuverability, electric power steer, and short turn radius (12 ft 8 in. at 90°) really pay off. On this job near Los Angeles, 2 "D's" each averaged 4 trips, 28 pay yards hourly on a 5-mile cycle. They moved dirt at ½ the cost of shovel and trucks, says Owner Sterling R. Macbeth, Montebello, California.



4 major jobs for 1 tractor — 19 mph speeds let Tournatractor handle all dozing jobs on this 90,000 yd conservation dam. Rubber-tired tractor push-loads 2 C Tournapulls (main photo) . . . slopes muddy banks for irrigation channel (inset) . . . levels rock on fill . . . cleans up around rock shovel. When push-

loading, Tournatractor heaps Tournapull with 10 pay yds of sandy clay in 30 seconds. Fast spotting, 8 mph backup reduces "deadhead" time . . . instant gear changes save vital momentum. For more information write LeTourneau-Westinghouse Company, Peoria, Illinois. Tournapull—Trademark Reg. U.S. Pat. Off. Tournatractor—Trademark Pic-650-G

Basic Tax Law Revision Nearing Enactment

• Accelerated Depreciation Expected to Boost Plant Expansion

» CONGRESS is at work on, and probably will pass this session, a tax revision bill described as "one of the most important, the largest, and the most comprehensive legislation measure ever to come before Congress, or before any other legislative body anywhere at any time."

The bill, H. R. 8300, rewrites or recodifies the Internal Revenue Code, marking the first time it has been completely overhauled and revised since 1875. The bill is 875 large pages of small type and amends 8,023 different sections of the federal tax law. The House Ways and Means Committee report explaining it took 550 pages.

The House passed the bill on March 18. The Senate Finance Committee concluded its hearings on the bill April 23. The measure is a basic part of the Administration's economic planning, and passage is expected in this session.

As explained by Rep. Daniel A. Reed (R. N.Y.), chairman of the House Ways and Means Committee, in opening debate on the legislation:

"This bill represents a complete overhaul of our revenue laws, the first since the enactment of the income tax. It removes hundreds of inequities which discriminate against all segments of our taxpaying population. It closes numerous loopholes through which a few taxpayers today are able to avoid their fair share of the tax burden.

"It is designed to achieve a peacetime expansion of the economy which we have hitherto been able to achieve only in time of war. It will mean more jobs, goods, and services will be available for our citizens."

Promote Economic Growth

As hearings concluded before the Senate committee, the Committee for Economic Development presented a simplified explanation of effects:

"The essential feature of the current proposals is the deliberate attempt to promote economic growth in a world where government expenditures and taxes are inevitably high. This attempt is important because it recognizes that economic growth and efficiency are primary objectives today and that tax reform is one of the main

ways to achieve those objectives. The new provisions for depreciation, for the taxation of dividends, for the treatment of foreign income and for the retention of corporate earnings all reflect this point of view.

"These proposals are not designed to provide tax privileges for any group. They are not designed to meet the temporary requirements of the current economic readjustment or any other transitory situation. They are designed to make our tax system equitable and more consistent with the long-range interests of our economy and our nation."

After the bill has become law THE CONSTRUCTOR will make thorough analyses of the ways in which it is beneficial to contractors.

Tax Reductions

While the bill is primarily a tax revision measure, the correction of inequities will result in savings of approximately \$1.4 billion during the next fiscal year. Of this over-all amount, individual taxpayers will benefit by \$778 million and corporations by \$619 million. With previous cuts in excise taxes, reductions in income taxes, and elimination of the excess profits tax, tax reductions will total approximately \$7 billion annually.

The bill, however, retains the corporation tax rate at 52%, postponing scheduled reduction to 47%.

Following World War II, work was started by Congress with a view toward rewriting tax legislation and bringing about long needed reforms. But the readjustments of the economy and the Korean war postponed effective action. In August 1951 the Joint Committee on Internal Revenue Taxation took the first step in the present project, and for the past 15 months members of the joint committee staff, members of the Senate and House committees, and experts of the Treasury Department have worked intensively on the greatest study of tax legislation in the nation's history.

The House committee, starting in 1953, held public hearings and heard testimony from more than 600 witnesses. The Senate committee also has heard many. The last basic revision of the tax laws was in 1939 when there were less than 40 million taxpayers.

Today there are more than 55 million taxpayers.

One feature of the tax bill which removes a tax obstacle for economic growth was cited by CED:

Accelerated Depreciation

"The tax law has always recognized that in calculating the net income of a business a deduction from receipts must be made for the decline in the value of capital assets that results from the passage of time, obsolescence, etc. Present tax laws and regulations strictly limit the rate at which these depreciation charges may be taken. The depreciation allowed in the early years of an asset's life is often less than the actual or probable decline in its value. This has a number of serious consequences.

"Businesses are reluctant to replace existing equipment with new equipment when the old still has a large value not yet written off. Also a risk is created, especially for smaller businesses, that the new equipment will lose its value as a source of income before all the allowable depreciation has been taken.

"The proposed provision would retain the limitation that total depreciation taken may not exceed the cost of the asset. It would also retain a limit on the rate at which depreciation may be taken. However, it would substantially relax this limit for investment in new assets after January 1, 1954, allowing more of the depreciation to be taken in the early years of the asset's life."

Would Stimulate Construction

According to Under Secretary of the Treasury Marion B. Folsom, probably "the most widespread criticism of the tax structure" has been directed at inadequate depreciation allowances, and the liberalizing provision in the legislation "is one of the most important in the bill, and would greatly stimulate spending for modernizing and expanding plants and for creating jobs."

Mr. Folsom added: "In recent years many countries have considerably liberalized the treatment of depreciation, with the view to stimulating plant expansion and modernization. The changes were effective."

The Associated General Contractors of America, which several years ago recommended such liberalization, endorsed the President's recommendations on this subject at the recent 35th A.G.C. annual convention.

Vote on St. Lawrence Seaway

The House of Representatives was scheduled early this month to vote on the St. Lawrence Seaway project for the first time in the more than three decades that it has been a controversial subject.

Proponents and opponents were freely predicting passage and defeat of the measure after the House Rules Committee cleared the way for consideration by a 7 to 5 vote. Leaders in both Houses predicted passage.

The bill, already passed by the Senate, was supported before the Rules Committee by Chairman Short (R. Mo.) of the House Armed Services Committee on the basis that it would be an aid to national defense.

As passed by the Senate, S. 2150 would create a corporation authorized to sell up to \$105 million in interest-bearing bonds to the Treasury, with the money to be paid back over a period of years. The corporation would construct and operate, in cooperation with a similar Canadian authority, canals, locks and a 27-ft. deep channel in the International Rapids section of the river, plus dredging in the Thousand Islands section, conditional on "satisfactory assurance" from Canada that it would complete its part of the navigation works.

Crux of the House test was expected to be an amendment proposed to require that the project be financed through the sale of bonds to the public, offered by Rep. Brownson (R. Ind.).

Excise Taxes Cut \$1 Billion

The act reducing federal excise taxes by \$1 billion, signed March 31 by President Eisenhower and going into effect the next day, will be helpful to business in two ways: (1) It will mean some reduction in business expenses through lower taxes on transportation and communications. (2) It will stimulate some lines of business because of lower prices resulting from tax reductions on a variety of articles, including household appliances, jewelry, furs, cosmetics, theater admissions, luggage, sporting goods, and many others.

In effect, the act reduced to 10 per cent most excise rates which were above 10 per cent, and halved the old 10 per cent rate on home appliances.

Construction Legislative Checklist

Status of major federal legislation affecting the construction industry, as of May 1:

Judicial review bill (S. 24) to offset effects of 1951 Supreme Court decision in *Wunderlich* case won final approval April 29 when Senate concurred in House amendments, and went to White House (page 25).

Subcontractor bill (H. 1825) to require general contractors to name specialty mechanical contractors and amounts of their offers in bids on federal work remains bottled up in House Rules Committee. Companion measure (S. 848) has been blocked each time it came up on Senate consent calendar.

Highway act reached final passage in Congress April 14 with adoption of conference committee report reconciling differences in bills of two Houses. Bill, authorizing nearly \$1 billion annually in federal highway funds for fiscal years beginning July 1, 1955 and 1956, awaited President's signature after delay to permit correction in printing. (Analysis on page 55.)

Taft-Hartley Act amendments were subject of Senate debate starting May 3 after favorable report April 15 by Senate Labor Committee, amending act substantially as recommended by President. However, Senate committee Democrats launched move to recommit bill to the committee for further study. House Labor Committee will postpone final action until Senate acts. (See page 36.)

Lease-purchase bill, authorizing federal acquirement of public buildings through lease-purchase contracts extending payments over 10 to 25 years, passed Senate April 20 and went to conference for compromise of differences with House (page 40).

St. Lawrence Seaway bill, already passed by Senate, received clearance for House vote April 29.

Housing legislation, passed by House April 2, was being delayed by Senate Banking and Currency Committee because of Congressional investigation of Federal Housing Administration scandals (page 39).

Upper Colorado River project, endorsed by President, was approved May 3 by a House Interior subcommittee which has set a \$1 billion limit on cost and included the controversial Echo Park Dam (page 31).

Tax revision legislation, passed by House on March 18, was before Senate Finance Committee, which has concluded hearings (page 28).

Social security bill, providing higher old-age benefits, increased taxes on employers and employees, and expanded coverage, was before House Ways and Means Committee.

Independent Offices appropriation, providing \$5.6 billion for almost 30 agencies, was before Senate appropriations subcommittee after passage by House on March 31, which cut Atomic Energy Commission and Tennessee Valley Authority funds below Administration requests (page 30). A.G.C. urged limitation on TVA force account construction before Senate group April 19 (page 32).

Civil functions bill, appropriating \$431 million for Corps of Engineers' work, below Administration requests and last year's funds, was passed by House March 16 and placed under study by Senate appropriations subcommittee (page 30).

Interior Department appropriation of \$364.3 million, 14% below budget requests and 17% under previous allowance, was voted by House April 6 and bill was being considered by Senate subcommittee (page 30).

State-Justice-Commerce Departments appropriation of \$1.17 billion, passed by House March 5, was still subject of Senate hearings.

Health facility federal aid totaling \$180 million in matching funds to states over next 3 fiscal years, and \$2 million in matching funds for planning, passed House March 9, had not yet received committee approval in Senate.

Military construction authorization bill proposing \$977 million program for defense services was subject of hearings by House Armed Services Committee. First action was to cut \$110.3 million from Air Force authorization with instructions to use funds previously appropriated but not spent (page 31).

Supplemental appropriation of \$442.3 million, including \$55 million for school construction in federally-congested areas, was passed by House March 25 and reported to the Senate on April 20.

Economy Is House Keynote on Appropriations

• Construction, Most Other Programs Cut Below Budget

» SEVEN of the 12 regular appropriation bills for the fiscal year beginning July 1 had been passed by the House as of May 1, but none had been acted on by the Senate.

The bills, aggregating \$40.6 billion as approved by the House, were \$1.7 billion below budget requests of the Administration. However, the \$1.2 billion pared from the big defense appropriation represented for the most part "bookkeeping changes," with actual costs cut by about \$541 million.

Agriculture Exception

Economy has been the rule in the House actions, closely following its Appropriations Committee recommendations, with the major exception of the Department of Agriculture bill, which was increased \$67 million above budget proposals.

Here is the House box score:

BILL	BUDGET	AS PASSED
	(Millions)	
Treasury-Post Office....	\$3,339	\$3,333
State-Justice-Commerce	1,314	1,169
Army civil functions....	465	431
Independent offices....	5,930	5,566
Interior Dept.....	422	364
Agriculture	973	1,040
Defense	29,887	28,681

Most public works programs have been cut below both the budget proposals and actual appropriations of the previous year.

The record \$1.2 billion appropriation for the Atomic Energy Commission, though reduced \$152 million below Administration requests, actually is an increase of \$132 million above funds allocated for 1954. Similarly the Housing and Home Finance Agency's amount was increased \$39 million above 1954, though cut \$6 million below the budget figure.

The Tennessee Valley Authority's \$103.6 million appropriation is 27 per cent below requests.

Force Account Limited

The Interior Department appropriation of \$364.3 million approved by the House April 6 is 14 per cent below budget proposals and 17 per cent less than last year's allowance.

In the Appropriations Committee report was a statement that "much larger sums" could be "profitably expended for development and conservation," but lower figures "are dictated in large measure by the urgent need for conserving dollars to improve the present federal government fiscal position."

Construction items include \$114.5 million for the Bureau of Reclamation, \$8 million for the National Park Service, \$5 million for Alaska public works, \$7 million for Alaska roads, \$7.5 million for the Alaska Railroad, \$7.7 million for the Bureau of Indian Affairs, and \$18.9 million for the Bonneville

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Power Administration, which took a large cut.

Limitations on the amount of funds permitted for force account construction again were incorporated for Reclamation and Bonneville, amounting to 12 per cent of money allotted to any project, and the limitation on such work on Alaska roads was tightened from 20 per cent to 17½ per cent of the appropriation.

The Corps of Engineers' \$431 million is 8 per cent below budget requests and \$10.6 million under the last appropriation. Major items include \$278.8 million for rivers and harbors and flood control, \$45.2 million for Mississippi River work, and \$2 million for Niagara remedial works.

H.R. 8149, which recently went to the Senate after passing the House, would authorize \$180 million in federal funds over the next three fiscal years on a matching basis to the states for the construction of hospitals for the chronically ill, nursing homes, diagnostic or treatment facilities, and rehabilitation facilities.

Upper Colorado Progressing

The billion-dollar Upper Colorado River reclamation project which recently was endorsed by President Eisenhower following a recommendation of the Interior Department, this month started moving slowly through Congress as the first big project sponsored by the new Administration.

A House Interior subcommittee on May 3 voted 12 to 9 for the bill, and it was expected to go before the full committee on May 18.

As approved by the subcommittee, the measure limits cost of the project to \$1 billion, and also includes the controversial Echo Park Dam in the Dinosaur National Monument in western Colorado. It also would authorize construction of Glen Canyon Dam in southern Utah and 11 "participating" irrigation and power projects in Colorado, New Mexico, Utah, and Wyoming.

A similar bill has been introduced in the Senate, but no committee meetings or hearings have been held.

Military Authorization Studied

A military construction authorization program, amounting to nearly \$1 billion for projects geared to a tighter continental defense against atomic attacks, is receiving a thorough combing by the House Armed Services Committee.

Part of the funds have been previously authorized by Congress, but the money was not appropriated.

Biggest portion of the authorization proposed by the Defense Department—nearly \$433 million—is earmarked for the Air Force, of which \$312 million would be for work inside the continental United States, and the remainder would expand the continental radar warning system and other classified projects.

First action of the committee was to cut the \$110.3 million authorization for the radar project from the bill. Committee Chairman Dewey Short (R. Mo.) directed the Air Force to take the money out of funds previously appropriated and not spent.

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Contract Method Urged for TVA Work

• Street Tells Senate Group Agency's Wage Policy is 'Disruptive'

» C. P. STREET, immediate past president of The Associated General Contractors of America, presented testimony to the Subcommittee on Independent Offices Appropriations of the Senate Appropriations Committee April 19 in support of the A.G.C.'s proposed amendment to the Tennessee Valley Authority appropriation bill limiting the amount of money that may be expended by the TVA for construction work by force account. Previously, on Feb. 16, Mr. Street had submitted similar testimony to the corresponding subcommittee of the House Appropriations Committee. (March CONSTRUCTOR.)

Mr. Street advanced two principal reasons why the TVA should employ the contract method of construction, as other major government agencies do, instead of performing its construction by the use of its own forces or by day labor:

1. The contract method assures the public of the greatest economy and efficiency in the construction of public works, through competitive bidding by qualified contractors. The TVA policy of construction by force account deprives the public of the benefits of free and open competition.

2. Use of the contract method by the TVA would eliminate the disruptive effects on the construction industry resulting from TVA actions in establishing wage rates and working conditions without regard to prevailing practices in the area.

The TVA is the only major agency of the federal government which performs the bulk of its construction by force account or day labor, Mr. Street pointed out. It has constructed dams, hydroelectric and steam plants, power distribution facilities, locks, canals and other navigation facilities, and many other structures for various uses, al-

most all of them with its own forces. Only a small portion has been constructed by private contractors under contract to the TVA.

All other major government agencies take advantage of the benefits to the public provided by the contract method, Mr. Street told the subcommittee. He cited as comparable examples the Bureau of Reclamation, the Corps of Engineers, and the Bureau of Public Roads, which employ the contract method in nearly all of their construction.

Benefits of the Contract Method

The experience of federal, state and local governments gives abundant evidence that expenditures of public funds are safeguarded by use of the contract method of construction, he said.

"Under the contract method of construction the project is publicly advertised and the contract is awarded to the lowest responsible bidder," he continued. "The advantages to the public can be summarized as follows:

"The guaranteed cost of the project is known before construction operations start.

"Quality is guaranteed in accordance with the plans and specifications.

"There is completion of the work on schedule.

"The lowest possible cost is secured through free and open competition.

"In preparing the plans and specifications for the bidding, the project is planned in advance to fit the needs most effectively.

"There is centralized responsibility for the construction operations.

"The work is carried out through the normal channels of the construction industry, which means, among other things, that the contractors and those who work with them and supply them pay their fair share of federal, state and local taxes on their operations.

"With the TVA doing the majority of its own design and construction work there are not these advantages to the public.

"One of the strongest forces working for efficiency and economy in the construction industry is the competition between contractors for the work coming on the market. If a contractor does not continuously keep improving his methods and efficiency, he does not survive for long in the contracting industry."

The government, Mr. Street added, obtains the benefit of this competition.

(Continued on page 35)



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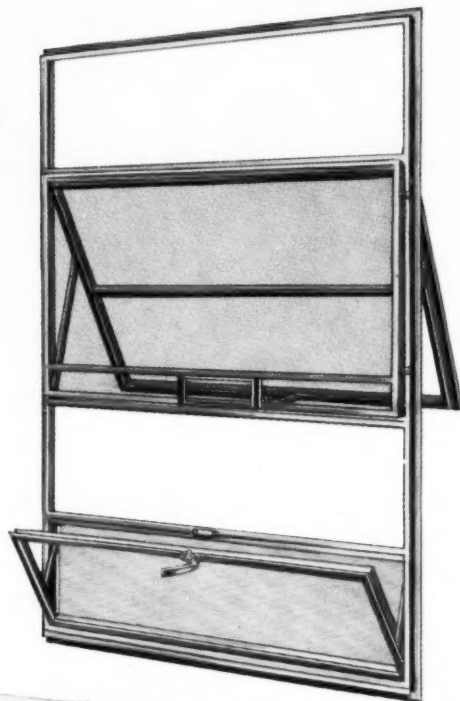
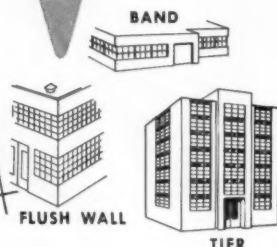
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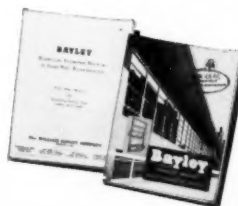


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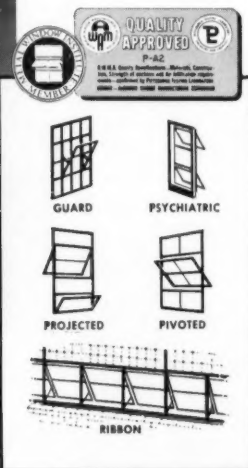
District Offices:

Springfield

Chicago 2

New York 17

Washington 16



LEGISLATION

(Continued from page 32)

Explaining the "disruptive impact" of TVA wage policy on other public work and private construction in the area, Mr. Street pointed out that the TVA is required by law to pay "not less than the prevailing rate of wages" for work of a similar nature in the vicinity. The agency negotiates wage rates paid on all TVA projects.

"The wage rates which TVA establishes in its negotiations are not those which are actually prevailing in the vicinity of projects as determined by collective bargaining by local groups of unions and construction employers, but reflect high wage rates of metropolitan centers outside the TVA area," Mr. Street said.

"Construction employers are not consulted about wage rates which are prevailing in various parts of the area, nor have they ever been permitted to sit in as observers on TVA negotiations even though the wage rates which TVA establishes have a great influence on the collective bargaining negotiations which construction employers carry on with the unions.

"The wage rates which TVA establishes are generally higher than those paid by construction employers, or the effect of the TVA rates creates such pressure for employers that they are forced to grant similar increases."

Examples Cited

Mr. Street presented comparisons of TVA wage rates with those paid by contractors in Nashville, Chattanooga and Memphis showing that the former were generally higher. Illustrative of the discrepancies is the comparison of TVA and Memphis rates:

Trade	TVA Rate	Memphis Rate
Iron workers.....	\$2.775	\$2.60
Operating engineers	2.725	2.525
Laborers.....	1.425	1.25
Carpenters.....	2.475	2.375
Cement masons....	2.45	2.375

"We believe," Mr. Street said, "that the disruptive effect on all other construction work in the area will be eliminated if TVA projects are constructed by contract and the wage rates for each project are predetermined by the Secretary of Labor in accord with the Davis-Bacon Act.

"We believe that this will have a stabilizing effect on the private construction industry in the states affected by TVA, and upon the construction of state and local public works in the southeastern part of the nation."

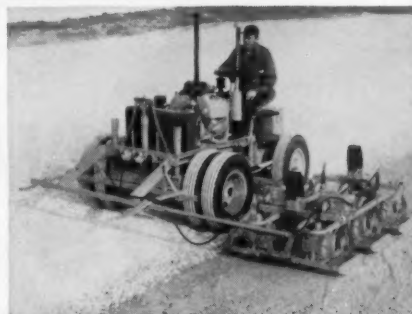


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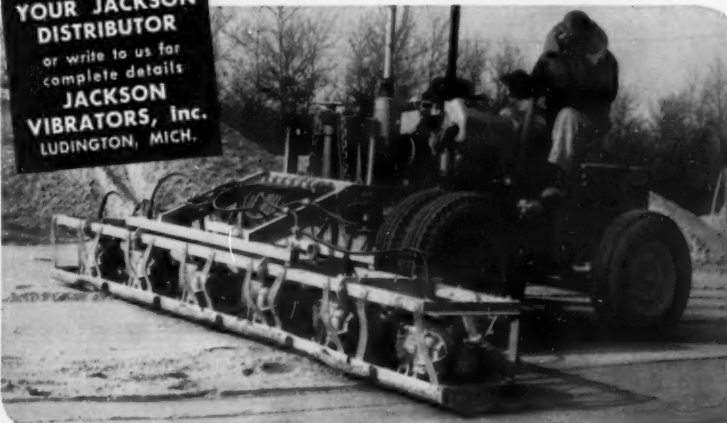
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Taft-Hartley Revision Set for Early Action

• Senate Committee Explains Special Construction Provisions

» FINAL action by Congress leading to amendment of the Labor-Management Relations Act was set to get under way the first week in May.

The Senate was scheduled to start debate on S. 2650, its bill to amend the Taft-Hartley Act, on May 3. Before the debate started its outcome was in doubt, although it was expected that the bill, possibly with some further revisions, would be passed by a small majority.

Fate of such legislation in the House was less predictable. Late in April Chairman Samuel K. McConnell, Jr., (R. Pa.) of the Labor Committee said that the committee probably would wait for the Senate to act.

After the President sent his 14-point message to Congress on January 11 giving his recommendations for amendment of the act, Senator H. Alexander Smith (R. N.J.), chairman of the Senate Labor and Public Welfare Committee, introduced S. 2650

"in order that what might be called the Administration bill may be immediately before our committee." (February *CONSTRUCTOR*, page 37)

The Senate committee, which had held lengthy public hearings in 1953 on possible amendments to the act, late in January started further public hearings on its bill and the President's recommendations. It favorably reported the bill, by a party-line vote, on April 15 substantially along lines of the President's recommendations.

The House committee, which also held public hearings in 1953, has not held public hearings this year on the President's recommendations, but has tentatively approved some of them.

The Senate bill, S. 2650, and the President's recommendations, contained two features directly pertaining to construction. One would remove the ban on secondary boycotts by unions taking action against secondary employers who are engaged to-

gether with a primary employer in performing construction work at a common site. The other permits employers and unions in construction (and other industries with intermittent casual or temporary employment) to enter into prehire agreements requiring membership in the union within 7 instead of 30 days.

The Associated General Contractors of America has informed both the Senate and House committees that any action to weaken the act with respect to secondary boycotts would be interpreted by members as discriminatory against the construction industry and inconsistent with the basic principles of the act.

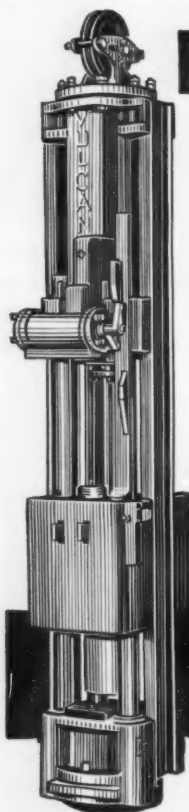
Late in April the Building and Construction Trades Council was seeking support for an amendment which would remove the construction industry from the Taft-Hartley Act for a year or two until satisfactory legislation for the industry could be worked out. The A.G.C. did not support the move.

Secondary Boycotts

The Senate committee report on its bill to amend the act is of interest, particularly because if the legislation is enacted, the report will be a part of the legislative history and will be referred to frequently. It stated:

"The provisions of section 8 (b) (4) (A), (B) and (C) of the National Labor Relations Act which prohibit secondary boycotts are designed to protect innocent third parties from being injured in labor disputes with which they are not concerned and for the existence of which they bear no responsibility. As the President pointed out, the true secondary boycott which inflicts economic injury on employers who are genuine neutrals in the dispute between some other employer and his employees, is indefensible.

"But there are situations in which the secondary employer against whom the disputing union exerts its economic strength is not a genuine neutral with respect to the dispute between such union and the primary employer, where the secondary employer is in fact, either a conscious ally of the primary employer involved in the dispute, or so closely involved in a joint or common venture with the primary employer that both may be regarded, for all practical purposes, as partners in a single enterprise. The President therefore recommended that such non-neutral secondary employers be denied



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the protection of the ban on secondary boycotts.

"Thus, where two or more employers are engaged in operations on the site of a single construction project, each performing some phase of the work necessary for the completion of the project, be it a building, a bridge, a tunnel, or some other structure, it cannot be justifiably maintained that they stand in a strictly neutral relationship to each other.

"Rather, despite their existence as legally independent entities, they must be regarded realistically as partners in a single joint or common enterprise in which the individual interests of each are necessarily dependent on the success of the undertaking as a whole. In such a situation the committee believes that a labor dispute originating between one of these employers and his employees in fact constitutes a dispute with all of the employers just as if all were co-partners in the legal sense in a single business enterprise.

"It therefore permitted an amendment permitting the union representing the employees of the employer

primarily engaged in the dispute to extend its economic pressure to any or all of the other employers working on the same project at the common site without thereby violating the provisions of the act's ban on secondary boycotts, provided that the union involved in the primary dispute was not otherwise acting unlawfully or in violation of the terms of an existing valid collective bargaining agreement. The effect of this amendment would be to overrule the holding of the United States Supreme Court in *NLRB v. Denver Building and Construction Trades Council et al.*" (July 1951 *CONSTRUCTOR*, page 36.)

Opposing Opinions

Three Republican Senators took exception to the committee report with respect to secondary boycotts. They were Senators John S. Cooper, Ky., Barry Goldwater, Ariz., and Robert W. Upton, N.H. Senator Goldwater stated: "I do not believe that a case has been made for relief in such situations. The ultimate practical result would appear to be the required union-

ization of every employee who seeks to work in the building construction industry."

Senator Goldwater reserved the right to support S. 2989, by Senator Andrew F. Schoeppel (R. Kans.), when and if it is offered on the floor as an amendment. This bill is designed to close loopholes in the present law concerning secondary boycotts.

Democratic members of the committee unanimously voted against the bill and were preparing a minority report.

Prehire Agreements

The Senate committee made the following analysis of a new section of the bill permitting pre-hire agreements in construction:

"This new subsection makes it initially lawful for both the employer and the union to enter into a collective bargaining agreement providing for exclusive recognition of the contracting union even though the union is not the representative of a majority of the employees in an appropriate unit at the time the agreement is signed and requiring, as a condition of employment, membership in the contracting union after the 7th day following the beginning of such employment or the effective date of the contract, whichever occurs later. The amendment is not intended to preclude the signing of contracts which involve only one of these special features rather than both.

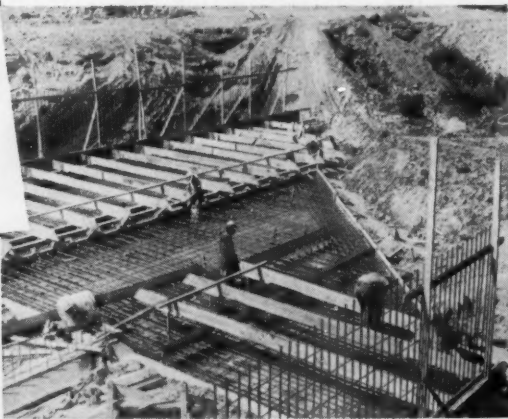
"The amendment applies only to employers primarily engaged in the construction, entertainment and casual employment industries and their employees who perform work of a character customary to those industries. Thus, an employer whose operations are predominantly and primarily but not exclusively those of a building contractor would be covered by the proposed provision but not with respect to those of his employees who are performing work in an operation outside or unrelated to the construction industry.

"The committee has not attempted to provide a definition of 'construction industry' and 'construction work' . . . as used in the amendment. The administration of the Davis-Bacon Act and the regulations promulgated thereunder as well as the recent operations of the Construction Industry Stabilization Commission of the Wage Stabilization Board should provide adequate guidance in determining applicability of the terms 'construction industry' and 'construction work.'"

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Probe Delays Housing Bill

The Administration's housing bill, which passed the House April 2, has been shelved temporarily by the Senate Banking and Currency Committee pending the investigation of the alleged scandals in the Federal Housing Administration.

"Serious irregularities and abuses" were charged in the FHA modernization and repair program with the result that home owners paid twice the value of repair jobs and got "shoddy" work in return. It was also claimed that some apartment builders pocketed "windfall" profits by "illegal or unethical" practices concerning FHA-insured loans.

The result of these charges has been that the Senate committee, holding preliminary investigations of the FHA, is about one month behind on the housing bill. Chairman Homer E. Capehart (R-Ind.) hopes to get the bill cleared through the committee and out on the Senate floor by June 1.

Before the scandals broke last month the House passed its version of the bill, eliminating President Eisenhower's new public housing program which called for 140,000 units in the next four years. The House bill with liberal policies, would encourage private home construction at the rate of one million units a year. Lower down-payments and smaller monthly payments on government-insured mortgages would make home buying easier.

Republican leaders have contended that 33,000 to 35,000 public housing units can be built this coming fiscal year under the present law.

The House knocked out a request to allow lenders to charge veterans more than 4.5% interest on G.I. loans.

Under the slum-clearance program, liberal mortgage insurance would be available for building new or repairing run-down dwellings. Low-income families could move out of the blighted areas into homes costing up to \$7,600 without any down payments.

Other major points in the legislation would (1) curb federal mortgage buying by converting the Federal National Mortgage Association into a new agency to be partially financed by capital; (2) require builders of government-insured homes to give buyers a warranty that construction meets required specifications; and (3) set low down payments on homes costing up to \$10,000.



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Lease-Purchase Bill Sent to Conference

• Government Would Buy Public Buildings on Installment Plan

» LEGISLATION which would authorize the federal government to secure post offices and other public buildings through lease-purchase agreements was passed by the Senate last month and sent to conference for compromise of differences with the House.

The bill, H.R. 6342, was passed by the House in July 1953. After considerable debate, it was passed by the Senate on April 20 this year. It is likely that Congressional action will be completed before adjournment, and the bill sent to the White House for signature into law.

Construction Stimulus

When enacted, the legislation will open up a construction market for the construction of public buildings by private capital, with the government leasing the structures for periods of ten to 25 years with ownership

reverting to the government at the end of that period. While a figure of \$3 billion has been used, there can be now no accurate estimate of the construction program which the legislation will stimulate.

The bill is in two titles. Title I authorizes the General Services Administration to enter into lease-purchase contracts for the use and eventual acquisition of public buildings specifically designed for government uses which are not predominantly for postal purposes. These include courthouses, customhouses, warehouses, and general-purposes buildings.

Title II gives the Postmaster General similar authority to enter into lease-purchase agreements with private groups for postal facilities.

A feature of the Senate version, not passed by the House, requires approval by the Senate and House Public Works Committees of lease agreements of an

annual payment in excess of \$20,000, which means a construction cost of approximately \$200,000.

The Congress states specifically in the bill, and in committee reports, that this is not a substitute for any program for the construction of federal buildings by direct appropriations. The Senate committee explained:

"The least costly method (of securing public buildings), direct construction, has been almost entirely suspended for nearly 15 years, at first because of the advent of World War II, and then later because of other increased demands upon the federal budget. During the period the need for space for the permanent activities of the government has steadily increased with the result that those space needs could only be met by the most costly method, straight leasing.

"The committee feels that no reliable forecast can be made of the time when budgetary considerations would permit the appropriation of the huge sums required to meet these space needs by direct construction. It believes, therefore, that any intermediate method that will reduce the use of the costly straight leasing method will result in substantial overall savings. It has come to the conclusion that the lease-purchase contract method would provide such overall savings, and should be adopted as a supplementary means of meeting the more urgent permanent requirements to be used when the direct-construction method is not feasible of attainment due to budgetary conditions."

Problems of Contracting

While the legislation, if enacted, will stimulate building market it also brings about problems which have not yet been resolved.

Because the legislation has not been enacted, neither the General Services Administration nor the Postmaster General has issued policies or regulations under which the act will be administered, or determined the manner in which awards will be made for the lease-purchase contracts.

The bidding probably will not be for a construction contract, but for the amount of the annual payment to be made on the lease for a building designed for government use.

The Associated General Contractors of America has been making a study of problems to be encountered, and has offered its services to the government in the establishment of policies and regulations.



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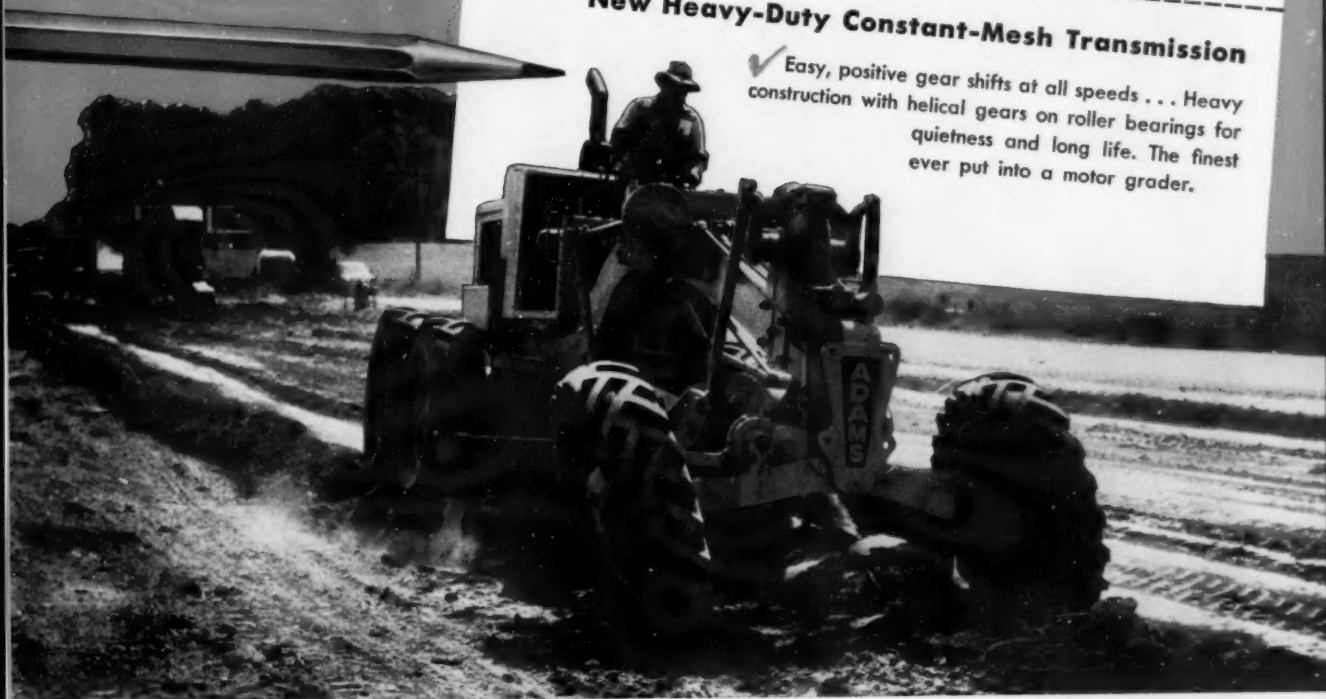
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CAT® NO. 12 MOTOR GRADER does quality work in tough, sticky soil on the new levee in Kansas City, Kans. Explains M. C. Green, general superintendent of Storms & Frew Construction Co.: "We favor Cat machines because they take more abuse than other makes but still are easier to operate."



A D13000 DRIVES TOWBOAT JOHN THOMAS, owned by Massman Construction Co. The boat moves and holds in place barges with 100 tons of rock to fill tow trench in the Kaw at Turner, Kans. The operator, Alan Anderson, declared: "The D13000 has all the power I need and it's not a noisy engine. I have to live with it, so this means a lot to me."



POWERFUL CAT D337 DIESEL powers the Joy Compressor for drilling blast holes in a new quarry to obtain rock for two Kansas City levees. Rock formations include Cement City Ledge 8' deep, Raytown Limestone 8' deep, and Argentine Limestone 30' deep. Expected production: 3000 tons daily. Says J. W. Petett, superintendent for George Bennett Construction Co.: "This compressor gives us all the pressure we need to operate two drills without running itself to death."



TIGHT TURNS IN SANDY SOIL were required of this D8 with No. 80 Scraper, owned by Miller Brothers Construction Co. Despite these tough conditions, the Caterpillar unit is making 45 to 50 round trips daily with heaping loads on a half-mile haul at the Kaw's mouth. Little wonder that owner W. F. Miller says: "In the 14 years we've been operating, we have found these tractors to be our most durable and rugged machines."



DRAGLINE DRIVEN BY CAT D13000 works 16 hours a day on the project. Owned by Massman Construction, this Manitowoc 1½ yd. dragline will dig a tow trench, fill it with rock, and dress the slope on the levee with riprap. Frank W. Pitz, superintendent, said: "I think we have only one power shovel without a Cat Diesel in it. Sounds like we like them, doesn't it?"

SAFETY ON THE D7 is uppermost in the mind of Johnnie Stone, operating the tractor for Bales & Kite. Says Johnnie: "I wouldn't work on a steep bank like the ones around here with any other make of tractor." Equipped with a No. 75 Bulldozer, the D7 is 'dozing the top of the riprap as it is dumped at the mouth of the Kaw River.



A CATERPILLAR TEAM PRODUCES for Bales & Kite at the mouth of the Kaw. The speedy DW10 with a No. 15 Scraper dumps sand where a dragline powered by a D13000 picks it up and redistributes it. It is used on the levee face to form a foundation for rock. Production: 1000 cu. yds. daily. Says co-owner M. B. Kite: "The best all-around machines are Cat machines. They have longer life, less down time and my men like to operate them better."

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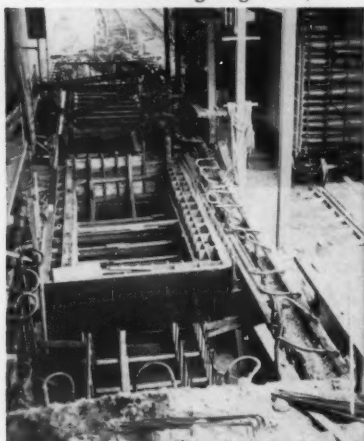
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LABOR RELATIONS

NLRB Acts to Protect Philadelphia Firms From Pipefitters' Jurisdictional Pressure

• Finds Unfair Labor Practice; Encourages Joint Board Use

» THE National Labor Relations Board last month issued an important decision on charges of unfair labor practices by a union against another union growing out of a jurisdictional dispute. The decision was notable in three particulars:

1. NLRB did find two locals of the pipefitters union guilty of unfair labor practices by seeking to force employers to assign work disputed with the riggers to their members.

2. NLRB went beyond the specific incidents cited in the cases and made a determination affecting the entire Philadelphia area.

3. NLRB stated its position as encouraging use of the National Joint Board for the Settlement of Jurisdictional Disputes for the solution of jurisdictional problems.

The cases involved Locals 420 and 428 of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry, and Riggers and Machinery Movers Local Union 161 of the International Association of Bridge, Structural and Ornamental Iron Workers.

Throughout the proceedings they were referred to as "pipefitters" and "riggers."

The cases, No. 4-CD-19 and 20, grew out of charges made on February 26 and May 8, 1953 by the riggers that the pipefitters were engaged in unfair labor practices proscribed by Section 8 (b) (4) (D) of the Taft-Hartley Act.

The Facts

The NLRB, in deciding the two cases together, described the facts as follows:

"It appears that the Pipefitters have for a considerable time maintained, in substance, that the rigging of all materials on which pipefitters work was and is within its jurisdiction. This claim was addressed to all piping and general contractors with whom the Pipefitters had collective bargaining agreements. Some piping contractors, however, subcontracted the rigging work on heavy pipefitter materials to rigging contractors, who in turn had collective bargaining agreements with the Riggers. This subcontracting prac-

tice arose primarily because the piping contractors did not have adequate equipment for heavy rigging work. Moreover, some general contractors, who hired directly both pipefitters and riggers, assigned the disputed rigging work to riggers in the belief that they were better qualified to handle such work.

"Faced with action in derogation of its claimed jurisdiction, the Pipefitters sought and obtained from the piping contractors in the Philadelphia area a contract which provided in part that all rigging work would be done by pipefitters."

The Pipefitters secured a similar contract from general contractors. The Riggers exerted pressure on rigging contractors to prevent the rental of rigging equipment to piping contractors. Disputes arose on jobs in the area. When contractors refused to reassign the work as demanded, the Pipefitters retaliated with strikes, sit-downs or standbys.

Applicability of Statute

After an examination of facts on four projects, and the contentions of both unions, NLRB stated:

"We find a distinct pattern of conduct revealed by our study of this record. That pattern inescapably defines both the nature and purpose of the Pipefitters' conduct. It shows that the Pipefitters provoked work stoppages wherever its claimed work jurisdiction was not respected. It further shows that the purpose of such stoppages was to force the several contractors to reassign the disputed work to the Pipefitters. With this pattern in mind, the Pipefitters' conduct at each of the job sites described above is clearly identifiable as conduct falling within the proscription of Section 8 (b) (4) (D)."

The Board added:

"Although the particular jobs which gave rise to the present case have been completed, the underlying jurisdictional dispute has not been resolved. It exists as much in the Philadelphia area today as on the completed jobs. Indeed, these jobs were completed only because the employers involved either capitulated to the Pipefitters' jurisdictional claim or insisted that the work

be performed as originally assigned to the Riggers. A determination by the Board is therefore still necessary . . ."

Jurisdictional Board

In concluding its review of the merits of the dispute, NLRB stated:

"We view these disputes as more than an isolated series of occurrences. As already mentioned, there is a pattern of conduct by the Pipefitters which is nothing less than a continuing plan to effect a Pipefitters' monopoly of the disputed work in the Philadelphia area.

"We do not believe that a determination limited to those particular employers would have the desirable deterrent effect on further aggressive action growing out of this jurisdictional dispute. Therefore, in order to effectuate the policies of the Act, we will broaden our determination so as to protect all employers in the Philadelphia area from an unwarranted continuation of this jurisdictional strife.

"In so acting, we remain cognizant of the other media available to the parties for settlement of this dispute; for example, agreement to use the Joint Board's (National Joint Board for the Settlement of Jurisdictional Disputes) facilities. We do not intend to discourage the use of such media. Indeed, we believe that by broadening our determination, we may encourage an expeditious use of those media for the effectuation of a final adjustment of the underlying jurisdictional dispute between the two unions."

Determination

"We find, accordingly, that the Pipefitters were not lawfully entitled to require any of the above employers and are not lawfully entitled to require any employer to assign the disputed rigging work to members of the Pipefitters rather than to employees assigned by the employers to perform such work."

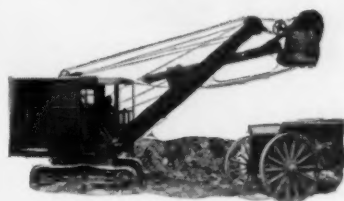
Pursuant to Section 10 (k) of the Act, the Board stated that the Pipefitters "are not and have not been lawfully entitled to force or require any employer in the Philadelphia area to assign the rigging on any equipment to members of Locals 428 and 420 rather than to members of Riggers and Machinery Movers, Local Union 161."

The two locals were given ten days in which to notify the NLRB regional director in writing of steps taken to comply with the decision.



You can always rely on equipment carrying the distinctive UNIT emblem. Backed by more than a quarter century of engineering and manufacturing experience, this well-known trademark signifies progress in crane and shovel design. It is your guarantee of obtaining the finest and most dependable equipment that money can buy.

- **1930** — Every UNIT was equipped with ONE PIECE GEAR CASE, enclosing all gears, shafting and bearings in a constant bath of oil. Also featured was the CLUTCH SHAFT ASSEMBLY, using Disc Type Interchangeable Clutches and "Straight-in-line" engine mounting. Reduces maintenance. Improves performance.



- **1939** — Introduced AUTOMATIC TRACTION BRAKES. These internal expanding friction type brakes, engage and release automatically and provide traction lock without manual control. Steering is accomplished by single lever control.



- **1944** — Yes 10 years ago, UNIT made the "break" from the old style conventional type of cab to the UNIT FULL VISION CAB. The compact design of the upper structure enabled UNIT to make this decided improvement, giving the operator 360° of complete visibility. This exclusive feature was designed into the machine . . . not just tacked on.

- **1954** — Bring NEW DEVELOPMENTS such as: UNIT with TORQUE DRIVE — SOLENOID ACTUATED DIPPER TRIP — ALUMINUM TALLIC CLUTCHES — Latest Crane Carrier Design and other UNIT features described in Bulletin U-1153. Write for your copy.



UNIT models available in 1/2 or 3/4 yard Excavators . . . Cranes up to 20 tons capacity . . . Crawler or Mobile types . . . Gasoline or Diesel. Ask for literature.

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Light from a huge "glass wall" floods into the new engineering building at Howard University, Washington, D.C., shown above.

The Kinnear Rolling Door centered in this glass wall can be operated or left open without blocking off a single inch of glass area.

The rugged curtain of interlocking steel slats—originated by Kinnear—coils compactly above the opening. All surrounding floor, wall and ceiling space remains clear and usable *all the time.*

Notice also how the straight lines of the Kinnear curtain add to the modern appeal of this building.

In addition to this space-saving "self-contained action", Kinnear Steel Rolling Doors offer durable, low cost, all-metal protection against intruders, vandals, wind, weather, and fire. Kinnear Rolling Doors are built in any size, with manual or motor operation. Write for full details.

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LABOR RELATIONS

New Labor Dept. Officials

Two recent changes in the Department of Labor saw Arthur Larson, former dean of the University of Pittsburgh Law School, made Under Secretary of Labor and Paul E. Gurske, former chairman of the Oregon State Industrial Accident Commission, named director of the department's Bureau of Labor Standards.

President Eisenhower nominated Mr. Larson to fill the position vacated by Lloyd A. Mashburn, an A.F.L. Lathers Union official, who resigned early last fall. The Senate confirmed Mr. Larson's appointment on April 5 and he was sworn in April 12.



Mr. Larson



Mr. Gurske

In discussing the new Under Secretary, Labor Secretary James P. Mitchell said that Mr. Larson was picked because of his background in the fields in which the department operates and because he is an administrator of "proven ability."

The former law school dean is an authority on workmen's compensation. He published a two-volume treatise on "The Law of Workmen's Compensation" in 1952 which has become a leading authority in the field. It is cited regularly in the appellate courts.

His paper contains a basic analysis of workmen's compensation, including unemployment compensation, social security, disability legislation, employer and union health and welfare plans.

Mr. Gurske, 65, who took office April 15, heads an agency which works closely with state labor departments, management and labor in promoting industrial safety, and better health and labor standards. He succeeds William L. Connolly who resigned recently.

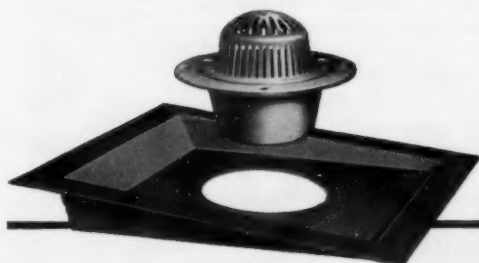
He received national recognition for developing an outstanding occupational program in Oregon. Because of his effective work, Oregon has one of the lowest occupational insurance rates in the nation.

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BUILT-UP SADDLES ELIMINATED

Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting, fitting or bending necessary.



SUMP RECESSES and SUMPS

Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

Now Provides SAFEST ROOF, and it is the LOWEST COST ROOF Obtainable!

A new concept in roof construction adds to Steel Deck's many advantages over other types of deck material. An effective, new type vapor seal provides safeguard against pitch seepage under extreme fire conditions. Now, more than ever before, Steel Deck is the most practical deck material available for modern roof construction. Year after year, Steel Deck roofs a greater percentage of new construction. The reason for this is simple . . . the over-all cost of a Steel Deck Roof is less than any other type of permanent, firesafe material. Steel Deck's light weight, and the fact that it can be insulated to the exact degree to meet local requirements, permits substantial savings in the supporting structure—total dead roof load will prove to be less than any other type in any given locality. Mahon Steel Deck is available in Galvanized or Enamel Coated Steel . . . stiffening ribs are vertical—no angular or horizontal surfaces where troublesome dust may accumulate. In the enamel coating process, the metal is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. Consider these extra-value features . . . See Sweet's Files for complete information, or write for Catalog B-54-A.

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Manufacturers of Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Insulated Metal Walls of Aluminum, Stainless or Galvanized Steel; Insulated Metal Wall Panels; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Shutters.

MAHON



Drainage and utility 202 Trenchliner (above) combines big work capacity with precision grading accuracy . . . produces up to 17½ feet of trench per minute. Digging wheel holds accurate grade, responds instantly to friction clutch control. Quick-change bucket fronts have cutting lips or teeth to suit soil conditions. Tile box and chute (optional) save time, labor on drainage jobs. Ground pressure is only 5 or 6 lbs. PSI with 16 or 20-inch rail-type crawler treads. Gas or diesel power.

Cross-country 215 Trenchliner (left) brings you all the high-speed digging advantages of wheel-type trenching . . . plus the increased traction of standard tractor crawlers, 18-inch treads and lug-type shoes. It digs up to 18 feet per minute, 13 to 31 inches wide, 6 feet deep. Hinged crumbler sweeps trench bottom clean, ready for pipe. Choice of 2 standard 55 h.p. diesel engines.

Other big-production advantages of these 2 Parsons wheel-type Trenchliners include: square or round-bottom buckets . . . cleaners for both solid or tine-back buckets . . . self-sharpening, easy-in-easy-out "Tap-In" teeth. For complete details, contact Parsons distributor, or write.

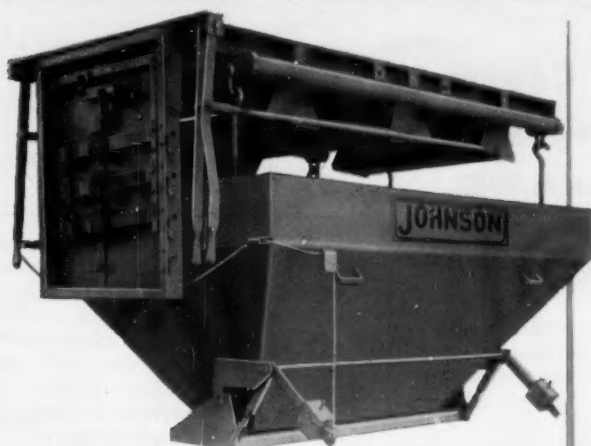
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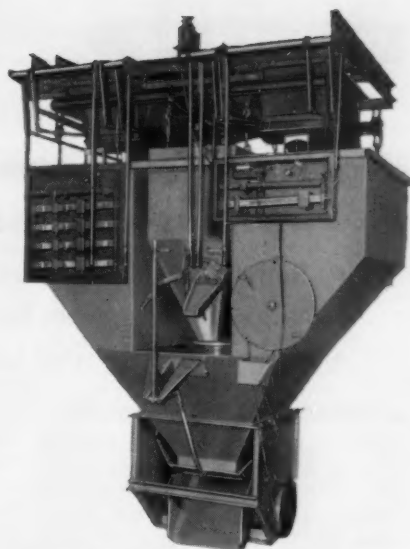
Also check Parsons for ladder-type Trenchliners: 3 heavy-duty sizes, all full crawler mounted, and rubber-tired Trenchmobile®.

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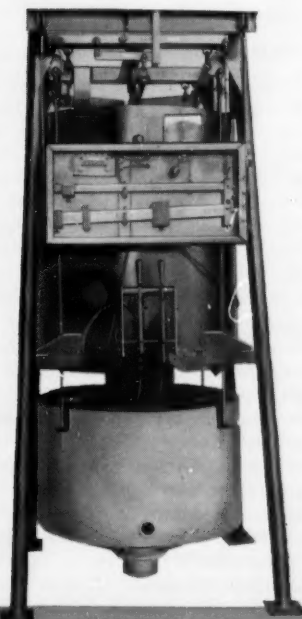
Ways to increase batching efficiency:



Fast filling . . . You save valuable seconds on batching time with Johnson "Hi-Speed" Roadbuilders Batcher, because big 15" x 36" fill valves permit fast charging. Wide fill valves also retain low batcher height. Standard batcher handles 2, 3 or 4 aggregates . . . has counterweighted wide-discharge gate with scale beams and hopper for standard 34-E paver batch. Capacities: 1½, 2, 3, 4 and 5 cu. yds. Truck-mixer-type hopper (interchangeable on same scale frame) handles 2 to 4 aggregates . . . or 2 or 3 aggregates and 1 cement. Has double-clam discharge gate, collector cone.



Central cement feed . . . prevents gumming, reduces dusting, and pre-shrinks materials. You get this big advantage with Johnson Concentric Batcher, because aggregates are arranged concentrically around the cement. All ingredients are intermingled as they flow through discharge. Cement is weighed separately on precision beam scale; aggregates on accumulative dial scale, or on individual beam scales. Dual discharge available. Batcher sizes range from 2 to 8 cu. yds., can be arranged for 2 to 8 aggregates, plus 1 to 4 types of cement. Fully-automatic, semi-automatic, or manual controls.



Accurate water weigh-batching

assures close quality control in concrete mix plant operation. Johnson Water Batchers are available in 2 sizes: 120-gallon (1,000 lbs.) for batches up to 3 yards . . . and 240-gallon (2,000 lbs.) for batches up to 6 yards. Weighing accuracy is not affected by changes in water temperature. Semi- or full-automatic types.

For more information on these, and the many other types of Johnson Batchers, contact your Johnson distributor . . . or write us.

Also check . . . Johnson clamshell buckets for stockpiling aggregates, charging bins . . . and Johnson concrete buckets for pouring normal-slump to stiffest-slump concrete. There are 3 types of all-welded clamshells to choose from, in 10 sizes . . . ¾ to 3 cu. yds. Heavy-duty concrete buckets are available in 3 types, and 8 sizes ranging from ½ to 8 cu. yd. capacities.



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BINS • BATCHERS • SILOS • ELEVATORS • RECEIVING HOPPERS • ELEVATING CHARGERS

Highway Maintenance by Contract a Growing Business Among States

- Thirty-Eight States Awarded Contracts in 1952
- Majority Pleased with Results, A.A.S.H.O. Finds
- Many Items Suggested for Contract Method

» THAT MAINTENANCE of highways by contract is a growing business, and is helping many states solve their maintenance problems with economy, speed and efficiency, is attested by the final report of 1952 contract maintenance operations in the states recently compiled for the American Association of State Highway Officials.

The comprehensive study, carried out under direction of the A.A.S.H.O. Maintenance and Equipment Committee by its Subcommittee on Contract Maintenance, also indicates interest on the part of many states in expanding contract operations in this field which accounts for roughly one-fourth of total highway construction expenditures.

Highlights Summarized

Salient findings of the survey which was carried out by a detailed questionnaire, are as follows:

- \$600 million was spent in 1952 by state highway departments for road maintenance, of which \$100 million, or one-sixth, was awarded to contractors, principally in types of resurfacing work.

- 38 states performed various types of maintenance by contract, of which 25 reported either satisfactory or "highly satisfactory" experience with the method.

- 65% of the dollar volume of maintenance contract work was concentrated in 12 states.

- The states listed 38 different types of maintenance work that they believe could be handled by contract.

Scope of Work

The \$100 million in contract expenditures consisted of \$60 million for regular maintenance work, \$33 million for betterments, and \$7 million in miscellaneous items. Actually, the amount spent for betterments is understated, since some states did not report this item.

Major contract items reported included \$58 million worth of surface work involving road mixes, high-type mixes and treatments; \$6 million for buildings; \$5 million for structures, and \$10 million for aggregate production and haulage.

Some "unusual items" of contract maintenance operations were reported, such as county snow agreements and

This is the fifth in a series of articles describing the benefits of handling highway maintenance work by contract. Reprints are available.

traffic operations in New York; sealing pavement joints in Minnesota (January 1954 *CONSTRUCTOR*); guard rail painting, surfacing of shoulders and chemical weed killing in Ohio (October 1953 *CONSTRUCTOR*); surface widening in North Carolina and Florida; and equipment rentals and repairs in Indiana, Minnesota, California and New Jersey.

\$65 million of the total contract maintenance work in 1952 was concentrated in the following 12 states:

Ohio	\$9,300,000
New York	7,260,000
Texas	6,550,000
California	6,410,000
Virginia	6,380,000
North Carolina	5,460,000
Kentucky	5,250,000
West Virginia	4,700,000
Minnesota	4,630,000
Illinois	4,160,000
Missouri	2,620,000
Michigan	2,450,000

Most Experience Favorable

Thirty-five of the 38 states engaging in maintenance by contract commented on their experience with the method, and of these, 25 reported either satisfactory or "very satisfactory" results. Of the 13 states which did not comment, 10 had no experience with the method.

Even among those 10 whose comments were listed as "unsatisfactory" were some which indicated little or no experience with the contract method, or which found the method adapted to certain types of maintenance.

Samples of favorable comments, summarized, follow:

Nevada: "Entirely satisfactory; quicker by contracting."

Indiana, Montana, North Carolina, Kansas, and District of Columbia: "Very satisfactory." D. C. added: "economical, efficient."

Missouri: "Contractors give fair results."

Ohio: "Highly satisfactory; contractors very eager."

Virginia: "Most satisfactory."

Minnesota: "Results usually very good."

Connecticut: "Big benefit."

Washington: "Very economical"



Resurfacing operations comprised the bulk of contract maintenance work in 1952, totaling \$58 million. Above is shown a typical job in New Hampshire.

when special skill and special equipment required."

Georgia: "Satisfactory, fast, economical."

Vermont: "Contract maintenance idea is growing."

Legal Restrictions

Thirty-one states have no legal restrictions on the use of the contract method for maintenance work, the survey showed, with nine not reporting.

Two states require the use of some convict labor which reduces the opportunity for contract work, and four others have miscellaneous restrictions regarding the use of state forces for maintenance.

One state is required to take bids for a project costing more than \$3,000 before it can use force account, and another for each mile of work or structure costing more than \$3,000.

Hampering Factors

Comments from states placed in the "unsatisfactory experience" category ranged from "only certain items of work lend to contracting," to the belief that "state does better," and that the cost was too high.

Only a small number of states reported contractors were not interested in maintenance jobs, or that jobs were too small to be attractive.

Difficulties in preparing definite specifications and units appeared to be an important factor with some departments. Others mentioned included penal labor, state and county interlocking operations, lack of sufficient supervisory force, large investments in equipment by the state, heavy payroll, and the necessity of retaining large crews because of heavy snowfalls.

Expansion Possibilities Great

An encouraging result of the survey was the listing by highway departments of 38 different items of maintenance which they thought could be handled by contract, indicating possibilities for substantial expansion in this field.

Twenty-four different states submitted such lists. Of those which did not suggest additional items, 11 already had reported satisfactory experience with contract maintenance. Some states which had no experience with contract operations also made suggestions for this method.

The suggestions listed are:

- Furnishing and applying (or ap-

plying only): liquid bituminous materials, aggregate as cover, bituminous dust layer, chemical dust layer, and bituminous mixes $\frac{3}{4}$ " or less in thickness.

- Full performance of surface sealing or mixed-in-place resurfacing $\frac{3}{4}$ " or less in thickness.

- Seal or spot patching of bituminous pavements, and other patching.

- Portland cement concrete pavement repairs.

- Undersealing and mudjacking of Portland cement concrete pavements.

- Furnishing and spreading aggregate on traffic-bound roads, and other surface work.

- Application of additional shoulder aggregate, and other shoulder work.

- Ditch cleaning and shaping, culvert cleaning, other drainage work, and street sweeping.

- Roadside mowing, weed killing, tree trimming, and other roadside work.

- Sign erection, painting or cleaning; painting of pavement markings; painting and repair of guard rail installations, and bridge cleaning and painting.

- Maintenance of traffic lights, and other traffic service work.

- Repair of bridge abutments and culvert headwalls, and replacement of timber decks on bridges.

- Maintenance of buildings used by highway departments.

- Winter maintenance contracts, including snow removal.

- Extraordinary maintenance following slides, washouts, etc.

- Contracts for rental of maintenance equipment.

- Production of maintenance materials, and contracts for haulage.

New Study Planned

The A.A.S.H.O.'s Contract Maintenance Subcommittee, headed by C. W. McCaughey, deputy director of the Ohio State Department of Highways, now has launched a new project designed to aid states in properly handling maintenance by contract.

Out of a study of the special specifications and contract documents used by those states which have been singularly successful in letting such work to contract will come a group of recommended specifications for the various types of maintenance.

The study just completed indicates an encouraging outlook for expansion of maintenance by contract. States with no experience in this method un-

doubtedly will profit from studies of the procedures used by those states which have found it successful.

The expanded highway construction program just authorized by Congress will increase the maintenance burden on highway departments in the future, and will require long-range planning to adequately meet the problem. The contract method is one solution.

Suggested Procedures

The Associated General Contractors of America has, from time to time, recommended procedures to obtain maximum economy in awarding contracts for maintenance. Among these are the following:

- That specifications permit the most economical use of equipment and use of large units wherever possible, and that designs take into account new construction methods.

- That plans be complete and definite, yet sufficiently flexible so they may be adapted without loss of time and, if possible, without increase in cost when conditions change in the field.

- That designs permit possible duplication of operations, and that the engineer keep in mind the contractor's methods for economical operations when preparing both contract documents and design.

- That the engineer be responsible for the accuracy of engineering data shown on plans.

- That interpretation of specifications be entrusted to supervisory personnel who have had practical experience, who have authority to make binding decisions, who understand contractors' methods of obtaining results, and who can interpret the specifications accurately without making unreasonable restrictions on the contractor's operations.

- That enough inspectors be provided to permit "round-the-clock" operations if required, to obtain economy by operating equipment for long periods of time.

- That a balanced program be attempted each year, and that all projects be awarded as early as possible to prolong the construction season.

Here's why Allis-Chalmers Motor Scrapers give you

EXTRA YARDAGE ON EVERY SHIFT



Modern equipment helps cut your operating costs in today's competition. Let your Allis-Chalmers dealer demonstrate how the Motor Scraper actually saves time on every trip, gives you extra yardage every shift.

	Hp.	Struck Cap. Yd.	Heaped Cap. Yd.	Wt. Lb.
TS-300	280	14	18	47,900
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TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Check these YARDS AHEAD features:

● Spend less time loading, get big loads...

Allis-Chalmers Motor Scrapers have up to 20 horsepower for every yard of struck capacity — for fast loading. A curved bottom and offset cutting edge boils the dirt in *fast* ... completely fills the bowl and packs yardage-robbing corner voids.



● Spend less time traveling...

The equal division of weight between front and rear wheels, low center of gravity, high-traction tires plus four-wheel air brakes give the operator confidence to run at top speeds. Foam rubber seat, finger-tip control, shock-free hydraulic steering and full visibility add safety and operator comfort, which pay off in greater output.



● Spend less time dumping...

Positive, forced ejection "bulldozes" dirt out on the run, spots or spreads it right where you want it. Ejector rides on a three-point roller suspension ... assures complete dumping of sticky loads. High apron opens to a big 8 ft. 6 in.



● A dirt-moving package that makes every second count...

The powerful HD-20 hydraulic torque converter tractor is an ideal team mate for your Motor Scraper. It automatically balances its speed to that of the scraper, makes full use of tractor horsepower at all times, avoids strain on the operator and equipment ... gives scraper an extra fast start to the fill.





Latrobe Const. Co.
turns
MANITOWOC
loose
on turnpike rock!

Mighty MANITOWOC moves 550,000 yards of rock on West Va. 'pike in 4½ months!

MANITOWOC—again selected to handle the tough, rough assignments.

Here's a 5½ yd. Manitowoc owned by Latrobe Construction Co. of Latrobe, Pa., taking on a heavyweight job and licking it like a true champion. Take a look at that rock near Beckley, West Va.—and yet, this "4500" drives right in and digs out an average 3000-5000 yards per 10-hr. shift when the going is toughest. At times, this "mighty" Manitowoc knocks out up to 525 Euclid loads per shift—a hefty 14 to 17 yards per load! That's the kind of pay-off yardage that spells *progress* when you're smashing through rock and sandstone two shifts a day!

If you can use this kind of performance on *your* jobs—do what Latrobe and other contractors all over the nation are doing—swing over to mighty Manitowoc. Write Manitowoc Engineering Corp., Manitowoc, Wisconsin.

More Reasons Why More Contractors are Switching to MANITOWOC . . .

... Check These "4500" Features

- Fast operating cycles • Special hi-lift shovels and long-reaching booms • Crawler-type mounting for faster travel over all grades up to 30% • Wide pads and crawlers that produce lower ground pressure than larger shovels • Complete diesel operation, which permits traveling anywhere without a trailing cable or electric supply • Shock resistant tubular stick that rolls through the saddle • Twist-absorbing boom design. • Smooth, positive-action TORQUE CONVERTER available for even faster working speeds.

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» ALMOST a billion dollars a year in federal highway funds—by far the largest amount ever authorized—will be provided for the fiscal years beginning July 1, 1955 and 1956, under the Federal-Aid Highway Act of 1954, passed last month. The act received congressional approval on April 14, when both the House and the Senate quickly adopted a conference committee report reconciling differences between their separate measures, and was signed by President Eisenhower on May 6.

Annual authorizations for the federal-aid systems total \$875 million in the new law, \$300 million more than under the present law, and expenditures for roads on federal lands will be increased from \$77.5 million to \$81 million a year. The authorizations for Latin American highways remain unchanged at \$10 million annually. The grand total under the new law is \$966 million a year, compared with \$662.5 million under present law.

When matched with state funds under the formulas prescribed, the \$875 million authorized for the federal-aid systems will mean total expenditures of more than \$1.5 billion under this legislation in each of the two fiscal years.

Besides raising federal-aid outlays to unprecedented levels, the new law contains several important innovations in highway policy.

Safeguard Against Fraud

One new provision requires sworn statements from contractors on federal-aid highway construction certifying that they have not entered into any agreement or participated in any collusion in restraint of free competitive bidding on such contracts; and for the first time the act makes collusion to defraud, in connection with federal-aid highway contracts, a federal criminal offense, punishable by a fine of \$10,000 or five years' imprisonment, or both.

The penal provision applies to any "officer, agent, or employee of the United States, or of any state or territory," and to any "person, association, firm, or corporation" convicted of knowingly making any false statement, representation, report, or claim with respect to materials, work or costs on federal-aid highway construction. (Full text on Page 56.)

Senator Albert Gore (D., Tenn.), sponsor of this provision, told the Senate:

"I believe we should let the people

Federal Highway Authorizations Near Billion a Year in New Act

- Penal Provisions against Contract Frauds an Innovation
- Sevenfold Increase Provided for Interstate Road System

know that the eye of the federal government will be upon the execution and performance of federal-aid road contracts. That arrangement will do a great deal to restrain what, according to rumor, amounts to a widespread practice of kickbacks of certain portions of the funds under highway contracts, collusion in restraint of free competitive bidding, and other malpractices."

Referring to the "immense amount of money" authorized by the act, Senator Gore remarked: "Certainly the taxpayers are entitled to all the roads that can be purchased by that money, without any political shenanigans or corrupt practices."

Interstate System Stressed

The major change in highway construction policy is the increased emphasis on the interstate system. The authorization of \$175 million a year for interstate highways, compared with \$25 million under present law, accounts for half of the total increase of \$300 million in federal-aid road funds.

This emphasis is heightened by

changes in policy on state matching of funds and in the formula for distribution of the money for interstate highways. The new act provides for matching on a 60-40 basis, with the Federal Government providing 60 per cent and the states 40 per cent of the funds for the interstate system. On all other federal-aid construction the long-established 50-50 matching basis is retained.

The change in the distribution formula applies to one-half of the funds authorized for the interstate system. A total of \$87.5 million annually will be apportioned to the states according to population, with a minimum of three-fourths of 1 per cent to any state, and the remaining \$87.5 million will be distributed according to Section 21 of the Federal Highway Act—one-third on the basis of area, one-third on population, and one-third on post road mileage, with a minimum of one-half of 1 per cent. On all other federal-aid systems the Section 21 apportionment formula will continue in effect.

While there is a sevenfold increase

Highway Funds Under Present Law and New Law

Authorization	Present Law (Fiscal 1954 and 1955)	New Law (Fiscal 1956 and 1957)
Federal-Aid Systems		
Primary	\$247,500,000	\$315,000,000
Secondary	165,000,000	210,000,000
Urban	137,500,000	175,000,000
Interstate system.....	25,000,000	175,000,000
Total Federal-Aid.....	\$575,000,000	\$875,000,000
Forest highways.....	22,500,000	22,500,000
Forest roads and trails.....	22,500,000	24,000,000
Park roads and trails.....	10,000,000	12,500,000
Parkways	10,000,000	11,000,000
Indian roads.....	10,000,000	10,000,000
Public land roads.....	2,500,000	1,000,000
Subtotal	\$77,500,000	\$81,000,000
Latin American Work		
Inter-American Highway.....	8,000,000	8,000,000
Rama Road in Nicaragua.....	2,000,000	2,000,000
Subtotal	\$10,000,000	\$10,000,000
Grand total	\$662,500,000	\$966,000,000

for the interstate system, authorizations for the other federal-aid systems are raised moderately and uniformly in relation to size. The primary highway authorization is increased from \$247.5 million under the present law to \$315 million in the new act; secondary highways, from \$165 million to \$210 million, and urban highways from \$137.5 million to \$175 million.

There is little change in authorizations for roads on federal lands, and none in those for Latin American highway construction. (See table on Page 55.)

Other Special Provisions

Other policy changes or special provisions incorporated in the new law include the following:

- The authorizations for forest highways, forest roads and trails, park roads and trails, parkways, Indian roads and public land roads are made available for immediate contractual obligation, with appropriations to come later. This provision, adopted because construction of these federal roads is so far behind, applies to authorizations under present law for the fiscal year beginning July 1, 1954, as well as for the two succeeding years covered in the act.

- The authorization for the Inter-American Highway is extended for five years, at \$8 million annually, to assure prompt completion of the remaining links. When completed, the highway will extend from the Mexican border to the Panama Canal.

- The Secretary of Commerce is authorized and directed to consult with the Civil Defense Administrator relative to the civil defense aspects of highways to be constructed or reconstructed.

- The Secretary of Commerce is authorized at his discretion to engage in research on all phases of highway construction.

- The Secretary of Commerce is directed to submit to the House and Senate Public Works Committees, not later than Dec. 1, 1954, a suggested draft of a bill or bills for a federal highway act which will include such provisions of existing law and such changes or new provisions as the Secretary deems advisable.

- The Commissioner of Public Roads is authorized and directed to make a comprehensive study of all phases of highway financing, including a study of costs of completing the highway systems in the states and of the progress and feasibility of toll roads,

with particular attention to the possible effects of toll roads on the federal-aid highway program. The act calls for a report to Congress on this study not later than Feb. 1, 1955.

- An authorization of \$100,000 is provided for interstate planning and coordination of a continuous Great River Road traversing the Mississippi Valley from Canada to the Gulf of Mexico.

- Special provision is made to enable Connecticut to save \$17 million by incorporating into a proposed expressway four sections of highway upon which federal-aid funds have been or are being expended. This will be accomplished by repayment of the federal-aid funds to the United States and their transfer for use on other projects in Connecticut eligible for federal aid. There is precedent for this procedure in a law enacted by the 81st Congress to facilitate the construction of the New Jersey Turnpike.

- The act permits states to transfer primary and secondary funds in either direction, up to 10 per cent, on request of the state highway department and approval by the Governor and the Secretary of Commerce.

The conference committee excluded from the act a provision in the House bill prohibiting the appropriation of federal-aid funds for the interstate system unless the federal gasoline tax was retained at 2 cents per gallon, and a provision in the Senate bill to permit the President, under certain circumstances, to advance the effective dates of highway authorizations.

Penal Sections of Highway Act

Following are the sections of the Federal-Aid Highway Act of 1954 governing award of contracts by competitive bidding and imposing, for the first time, penal provisions for collusion to defraud in the obtaining or awarding of contracts:

Sec. 17. (a) Highway construction work performed in pursuance of agreements between the Secretary of Commerce and any state highway department which requires approval by the Secretary of Commerce and which is financed in whole or in part by funds authorized under this or succeeding Acts, shall be performed by contract awarded by competitive bidding under such procedures as may be regulations be prescribed by the Secretary of Commerce, unless the Secretary of Commerce shall affirmatively find that,

under the circumstances relating to a given project, some other method is in the public interest. All such findings shall be reported promptly in writing to the Committees on Public Works of the Senate and the House of Representatives.

(b) In any case in which approval by the Secretary of Commerce of any contract for such highway construction work is required, the Secretary shall require as a condition precedent to such approval a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract.

Sec. 18. Section 1020 of title 18 of the United States Code is amended to read as follows:

"§ 1020. Highway projects

"Whoever, being an officer, agent, or employee of the United States, or of any state or territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the costs thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction of any highway or related project submitted for approval to the Secretary of Commerce; or

"Whoever knowingly makes any false statement, false representation, false report, or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Commerce; or

"Whoever knowingly makes any false statement or false representation as to a material fact in any statement, certificate, or report submitted pursuant to the provisions of the Federal-Aid Road Act approved July 11, 1916 (39 Stat. 355) as amended and supplemented,

"Shall be fined not more than \$10,000 or imprisoned not more than five years, or both."

Approximate Apportionment of Federal-aid Funds

Under the Federal-aid Highway Act of 1954

STATE	FEDERAL-AID				INTERSTATE			TOTAL (\$875,000,000)
	PRIMARY (\$315,000,000)	SECONDARY (\$210,000,000)	URBAN (\$175,000,000)	SUBTOTAL (\$700,000,000)	(\$87,500,000) Population ¹	(\$87,500,000) Section 21 ²	SUBTOTAL (\$175,000,000)	
Alabama	\$6,722,000	\$5,209,000	\$2,261,000	\$14,192,000	\$1,642,000	\$1,886,000	\$3,528,000	\$17,720,000
Arizona	4,711,000	3,208,000	671,000	8,590,000	643,000	1,319,000	1,962,000	10,552,000
Arkansas	5,244,000	4,197,000	965,000	10,406,000	1,024,000	1,470,000	2,494,000	12,900,000
California	14,459,000	7,444,000	15,339,000	37,242,000	5,676,000	4,070,000	9,746,000	46,988,000
Colorado	5,668,000	3,786,000	1,434,000	10,888,000	711,000	1,588,000	2,299,000	13,187,000
Connecticut	2,042,000	1,029,000	3,342,000	6,413,000	1,076,000	576,000	1,652,000	8,065,000
Delaware	1,543,000	1,029,000	354,000	2,926,000	643,000	429,000	1,072,000	3,998,000
Florida	5,117,000	3,345,000	3,094,000	11,556,000	1,486,000	1,437,000	2,923,000	14,479,000
Georgia	7,796,000	5,954,000	2,515,000	16,265,000	1,847,000	2,187,000	4,034,000	20,299,000
Idaho	3,883,000	2,731,000	332,000	6,946,000	643,000	1,087,000	1,730,000	8,676,000
Illinois	12,135,000	6,608,000	12,068,000	30,811,000	4,671,000	3,414,000	8,085,000	38,896,000
Indiana	7,477,000	5,154,000	4,128,000	16,759,000	2,109,000	2,099,000	4,208,000	20,967,000
Iowa	7,607,000	5,567,000	2,049,000	15,223,000	1,405,000	2,132,000	3,537,000	18,760,000
Kansas	7,645,000	5,352,000	1,622,000	14,619,000	1,022,000	2,140,000	3,162,000	17,781,000
Kentucky	5,806,000	4,820,000	1,792,000	12,418,000	1,579,000	1,630,000	3,209,000	15,627,000
Louisiana	4,908,000	3,553,000	2,529,000	10,990,000	1,439,000	1,379,000	2,818,000	13,808,000
Maine	2,643,000	1,891,000	721,000	5,255,000	643,000	741,000	1,384,000	6,639,000
Maryland	2,769,000	1,693,000	2,929,000	7,391,000	1,256,000	780,000	2,036,000	9,427,000
Massachusetts	4,001,000	1,486,000	7,182,000	12,669,000	2,515,000	1,131,000	3,646,000	16,315,000
Michigan	9,776,000	5,965,000	8,031,000	23,772,000	3,416,000	2,748,000	6,164,000	29,936,000
Minnesota	8,169,000	5,767,000	2,810,000	16,746,000	1,599,000	2,290,000	3,889,000	20,635,000
Mississippi	5,631,000	4,691,000	955,000	11,277,000	1,168,000	1,579,000	2,747,000	14,024,000
Missouri	9,181,000	6,212,000	4,250,000	19,643,000	2,120,000	2,575,000	4,695,000	24,338,000
Montana	6,326,000	4,332,000	406,000	11,064,000	643,000	1,770,000	2,413,000	13,497,000
Nebraska	6,142,000	4,355,000	1,012,000	11,509,000	711,000	1,719,000	2,430,000	13,939,000
Nevada	4,067,000	2,718,000	131,000	6,916,000	643,000	1,137,000	1,780,000	8,696,000
New Hampshire	1,543,000	1,029,000	511,000	3,083,000	643,000	429,000	1,072,000	4,155,000
New Jersey	4,073,000	1,370,000	7,554,000	12,997,000	2,593,000	1,151,000	3,744,000	16,741,000
New Mexico	5,121,000	3,518,000	566,000	9,205,000	643,000	1,433,000	2,076,000	11,281,000
New York	14,806,000	5,933,000	23,064,000	43,803,000	7,952,000	4,178,000	12,130,000	55,933,000
North Carolina	7,805,000	6,667,000	2,217,000	16,689,000	2,178,000	2,191,000	4,369,000	21,058,000
North Dakota	4,570,000	3,318,000	292,000	8,180,000	643,000	1,278,000	1,921,000	10,101,000
Ohio	10,984,000	6,681,000	9,985,000	27,650,000	4,261,000	3,090,000	7,351,000	35,001,000
Oklahoma	6,741,000	4,827,000	1,885,000	13,453,000	1,197,000	1,889,000	3,086,000	16,539,000
Oregon	5,385,000	3,763,000	1,384,000	10,532,000	816,000	1,509,000	2,325,000	12,857,000
Pennsylvania	12,363,000	7,357,000	13,063,000	32,783,000	5,629,000	3,483,000	9,112,000	41,895,000
Rhode Island	1,543,000	1,029,000	1,234,000	3,806,000	643,000	429,000	1,072,000	4,878,000
South Carolina	4,241,000	3,512,000	1,187,000	8,940,000	1,135,000	1,191,000	2,326,000	11,266,000
South Dakota	4,920,000	3,514,000	335,000	8,769,000	643,000	1,376,000	2,019,000	10,788,000
Tennessee	6,826,000	5,320,000	2,495,000	14,641,000	1,765,000	1,915,000	3,680,000	18,321,000
Texas	20,432,000	13,681,000	8,267,000	42,380,000	4,135,000	5,730,000	9,865,000	52,245,000
Utah	3,621,000	2,396,000	731,000	6,748,000	643,000	1,014,000	1,657,000	8,405,000
Vermont	1,543,000	1,029,000	269,000	2,841,000	643,000	429,000	1,072,000	3,913,000
Virginia	5,983,000	4,650,000	2,691,000	13,324,000	1,779,000	1,680,000	3,459,000	16,783,000
Washington	5,207,000	3,479,000	2,604,000	11,290,000	1,276,000	1,461,000	2,737,000	14,027,000
West Virginia	3,435,000	2,990,000	1,123,000	7,548,000	1,075,000	965,000	2,040,000	9,588,000
Wisconsin	7,441,000	5,192,000	3,379,000	16,012,000	1,842,000	2,088,000	3,930,000	19,942,000
Wyoming	3,928,000	2,662,000	188,000	6,778,000	643,000	1,099,000	1,742,000	8,520,000
Hawaii	1,543,000	1,029,000	580,000	3,152,000				3,152,000
Dist. of Col.	1,543,000	1,029,000	1,491,000	4,063,000	643,000	429,000	1,072,000	5,135,000
Puerto Rico	1,635,000	1,709,000	1,483,000	4,827,000				4,827,000

¹ Apportioned according to total population with minimum of 1%.² Apportioned according to Sec. 21 of Federal Highway Act— $\frac{1}{4}$ area, $\frac{1}{2}$ total population, $\frac{1}{4}$ post road mileage, with minimum of $\frac{1}{2}$ of 1%.

Le Roi-CLEVELAND T-286 Self-propelled Dual Drill Rig — consists of two patented Le Roi-CLEVELAND air feeds and drills with air-motor booms mounted on a mobile 25-hp tractor. You can drive the T-286 anywhere and tow your Air-master compressor as well. You get quicker setups, faster drilling, better fragmentation, and lower costs.



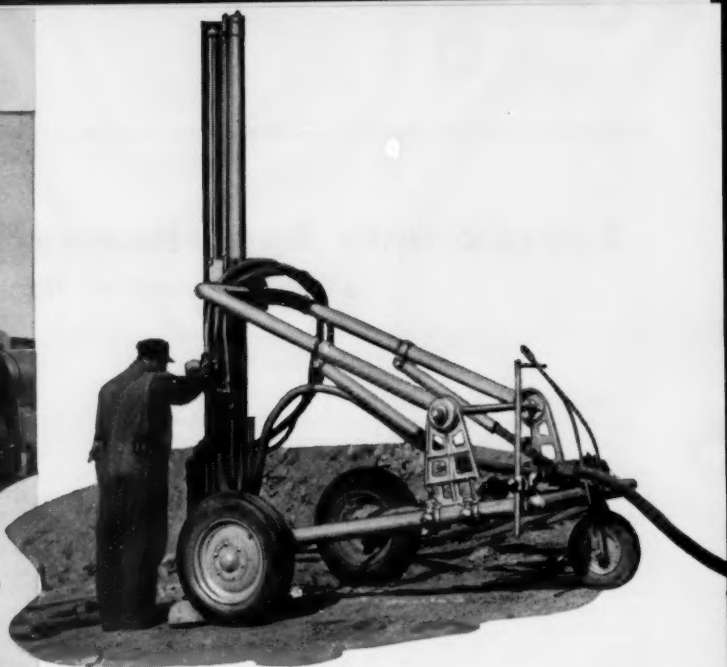
Le Roi-CLEVELAND Clay Digger — at work on a sewer job. Well-balanced for easy handling, these spaders pack plenty of wallop for the stiffest clay. Operators like them, because they can do more work with less effort. A one-piece, bonded, rubber buffer with split steel collars keeps out dirt and grit — makes steel changing faster.



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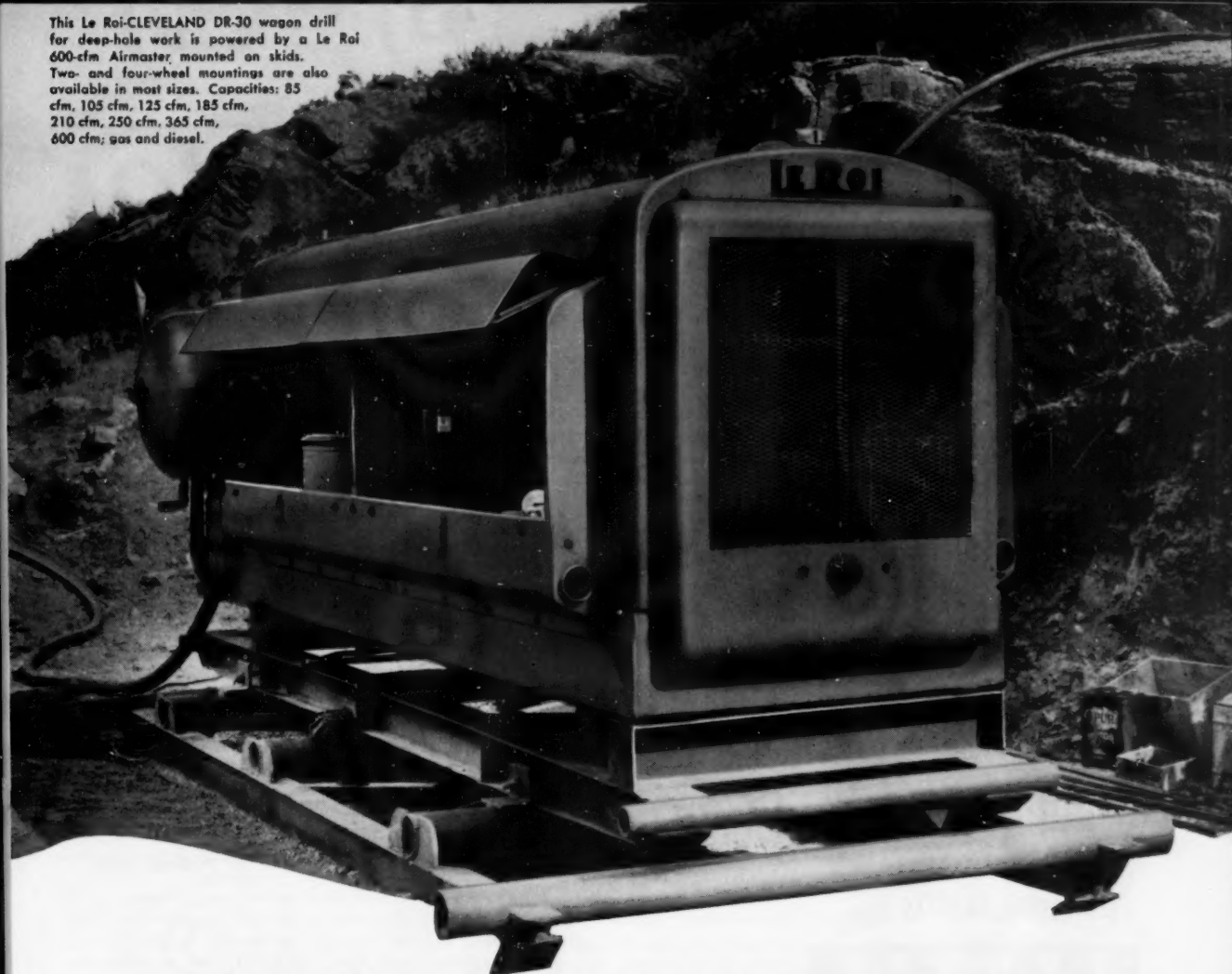
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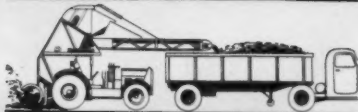
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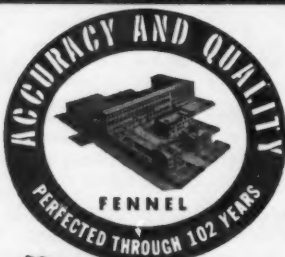
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HIGHWAYS • AIRPORTS

Highway Act May Set Permanent Pattern for Billion-a-Year Federal Authorizations

• New Funds Close to Minimum Urged by A.G.C. and A.A.S.H.O.

» WITH the passage of the Federal Aid Highway Act of 1954, authorizing almost a billion dollars a year for highway purposes, the government's road-building program advances sharply to a new high level. (Details on Pages 55-57.)

Total authorizations for the federal-aid systems amount to \$875 million annually for the fiscal years beginning July 1, 1955 and 1956, an increase of more than 50 per cent over the total of \$575 million a year under the present law. Other authorizations, for forest highways, parkways, etc., raise the total in the new act to \$966 million a year.

The big increase in federal-aid authorizations is the result of sustained efforts in recent years on the part of highway officials, organizations concerned with highway construction, and members of Congress to bring federal funds for road building more nearly in line with the needs for highway improvement. It reflects a growing realization on the part of the public, as well as interested officials and organizations, of the fact that highway needs have far outstripped highway development.

A.G.C. Views Presented

The Associated General Contractors of America, as one of the organizations concerned with highway construction, has consistently advocated a road-building program commensurate with the nation's needs. In resolutions adopted at A.G.C. conventions and in testimony before committees of Congress by A.G.C. spokesmen, the association has presented its views on this subject a number of times.

A resolution adopted by the A.G.C. at its 35th annual convention in Los Angeles in March noted that "the national problems resulting from an inadequate highway system are receiving growing recognition by the President of the United States, the Congress, and the public," and recommended that the federal government "assume its proper responsibility for the nation's highway needs by increasing federal-aid returns to the states of not less than \$900,000,000 annually." The resolution recommended also that federal-aid highway construction be administered

through present channels, and by the contract method; and that there be no diversion to other purposes of tax funds collected from highway users by any unit of government.

The A.G.C.'s recommendation of annual federal-aid authorizations of not less than \$900 million was the same as that of the highly authoritative American Association of State Highway Officials, which has long been in the forefront of the fight for an adequate highway system for the nation. The most recent revision of estimated deficiencies in the federal-aid systems compiled by the A.A.S.H.O., as of Nov. 1, 1953, indicates that 63.8 per cent of the 673,137 miles of approved federal-aid highways are in need of improvements which would cost approximately \$35 billion. (March CONSTRUCTOR.)

The Growth of Federal Aid

The federal-aid authorizations in the new act come within \$25 million of the total advocated by the A.G.C. and the A.A.S.H.O. as a minimum. Some members of Congress expressed themselves as feeling that the total authorized was not large enough. The bill passed by the Senate, in fact, called for authorizations for the federal-aid systems totaling \$910 million, compared with \$800 million in the House bill; and with other highway authorizations the Senate version would have amounted to \$1.010 billion a year. Other bills introduced called for even higher totals. The compromise of \$875 million for the federal-aid systems reached by the conference committee came closer to the Senate figure than to that of the House.

In approving the conference committee report, several senators voiced regret that the highway authorizations were not larger. Many members of Congress, however, recognized that if federal-aid authorizations were increased too sharply some of the states might face difficulties in matching federal funds.

The federal-aid program has grown fairly steadily since it was inaugurated in 1916. From an authorization of \$5 million for the fiscal year 1917, it advanced to \$100 million in fiscal 1921,

then dropped to \$75 million or less for the next eight years, and ranged between \$125 million and \$245 million during the following 14 years, except for the depression years of fiscal 1934 and 1935, when lump-sum public works appropriations for highway purposes replaced federal aid altogether. Again in fiscal 1944 and 1945, wartime years, there were no federal-aid authorizations and this lapse contributed heavily to highway deficiencies, as did another complete omission of federal-aid authorizations in fiscal 1949.

What of the Future?

Since the war, with the exception of the lapse in fiscal 1949, federal-aid authorizations have totaled \$500 million in five years, \$450 million in two, and \$575 million in the current biennium, fiscal 1954 and 1955. Now the new act raises the sights to \$875 million each for fiscal 1956 and 1957.

What of the future? Now that the annual authorizations for federal-aid systems and other highway purposes have been set at just under a billion dollars, some observers of highway policy and development believe that subsequent acts will provide total funds exceeding \$1 billion a year regularly, barring a national emergency such as war.

This belief is predicated on the fact that highway expenditures even under the greatly increased provisions of the new act will not overcome the deficiencies, and on the assumption that the public and Congress are aware of the vast importance of highway transportation to both the national economy and national security. A special congressional report by the Joint Committee on the Economic Report as far back as January 1950 said the United States would have to spend \$41 billion over a 10-year period on highways, roads and streets to meet estimated needs. (February 1950 *CONSTRUCTOR*.) And last January President Eisenhower in his Economic Report estimated that the total annual expenditure required to provide an adequate highway system within a decade is more than \$8 billion. (February *CONSTRUCTOR*.)

Only a portion of such a yearly expenditure would come from the federal government, of course; but in the light of these estimates, annual federal-aid authorizations of \$1 billion or more may well be expected in the future.

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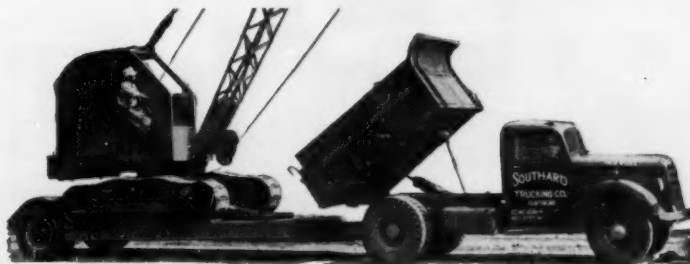
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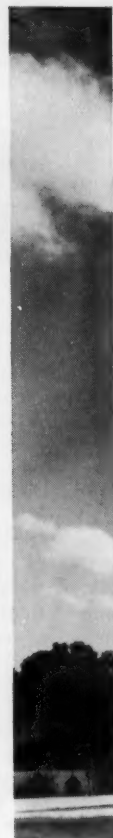
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Attaching of loaded Rogers Tagalong Trailer



Second floor cafeteria interior; attractive combination of Truscon Intermediate Projected Steel Windows with Truscon Picture Windows.



FIVE DIFFERENT TYPES OF TRUSCON STEEL



Interesting corner detail shows Truscon Steel Picture Windows combined with Truscon Intermediate Combination Steel Windows. Adjacent wall sections fitted with Truscon Steel Double-Hung Windows.



St. Vincent's Home, Omaha, Nebr. Steele, Sandham and Steele, architects. Parsons Construction Co., contractors.



Double-Hung Steel Window: wide range of styles, sizes. Stainless steel weatherstripped.



Intermediate Projected Window: wide variety of sizes, designs; projected and binged ventilators.



Intermediate Combination Window: Incorporates side-binged case and projected ventilator in one design.



Main entrance elevation of St. Vincent's Home. Truscon Intermediate Projected Windows combine with Truscon Picture Windows in second floor facade; Truscon Intermediate Steel Casements on ground floor.

WINDOWS SERVE NEW ST. VINCENT'S HOME

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OPERATING CONDITIONS: Drilling 19-foot holes in limestone as hard as granite

Lutz Company used clever rigs and **TIMKEN**[®] carbide insert bits to make two wagon drills do the work of three

LOOK at this clever arrangement. The Lutz Company in Oshkosh, Wisconsin, mounted two wagon drills with 20-foot feeds on farm tractors. Now they simply drive the tractor to the site, drill a 19-foot hole, back away and go on to the next spot.

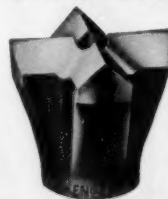
They use Timken[®] carbide insert bits and they start and finish each hole with the same bit. There's no changing bits or steels. These two drills do as much as three.

This is the hardest limestone in Wisconsin. (Geologists say it compares with granite.) Even so, they're breaking the rock out faster than they can haul it away, because of the efficient new set-up and Timken carbide insert bits.

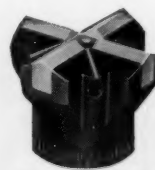
Timken carbide insert bits are generally the most economical bits for hard abrasive ground like this. But they aren't the best for all drilling conditions . . .

For ordinary ground, Timken multi-use bits are most economical. With correct and controlled reconditioning, they give lowest cost per foot of hole when full increments of steel can be drilled.

To find out which bit will provide the best drilling for your particular job conditions, call in the Timken Rock Bit Engineering Service. They've had 20 years of experience in matching rock bits to drilling needs. Write: The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Timken threaded
multi-use rock bit



Timken threaded
carbide insert rock bit

**your best bet
for the best bit
... for every job**

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

THE CONSTRUCTOR, MAY 1954

» ANTENNA erection for the world's most powerful radio transmitter, recently placed in operation by the Navy near Arlington, Wash., required considerable ingenuity.

The unique aerial for the transmitter (dubbed "Big Jim") is suspended between mountain ridges and is designed to minimize magnetic storms which frequently paralyzed communications with naval units in the Arctic. It required erection of 15 mi. of 1-in. cable in 10 spans from 5,600 to 6,700 ft. long between twelve 200-ft. towers set atop two 3,000-ft. ridges.

Design and construction of the complete station, costing an estimated \$14 million, was under administration of the Bureau of Yards and Docks. Numerous competitive bid lump sum contracts were awarded, and one cost-plus-a-fixed-fee contract to the Campbell-Atherton Co. for suspension of the antenna system and installation of the extensive radial ground system. Pomeroy Electrical Contractors, Inc., were subcontractors for the antenna suspension.

To withstand 1/2-in. radial ice in a 65 m.p.h. gale, the cable was spun from 37 stands of No. 7 extra-high-strength Copperweld wire. Erection problems involved handling the cable under heavy tension without making a scratch more than .003 of an inch deep, installing 21-ft., 1,700-lb. porcelain insulator assemblies and a 1,200-ft. download cable consisting of a hollow copper conductor.

The contractors met the problem with the tension method, feeding out the cable so it would not touch the

'Big Jim' Antenna Erection Was No Picnic

• Cable Suspended Between Mountains for Largest Radio Station

ground, with tensions up to 20,000 lbs. Two Skagit hoists were used with Buda engines and two 48-in. drums 19 in. in diameter with capacities of 5,000 ft. of 1-in. hoisting rope. Load capacity of each hoist was 15 tons with a full drum, and minimum speed of the bottom drum was 15 ft. per minute. One hoist was mounted on each side of the canyon, one pulling the cable in while the other paid it out.

A specially-designed steel clamp kept tension in the cable within the required 4,000-lb. limit. To prevent twisting, a 60-ft. steel angle "monkey tail" with a 95-lb. suspended weight was fastened between the front of the cable and the back of the 1-in. pulling line.

The antenna cable reel was held in a reeling machine on a 10-ton flatbed truck far enough away from the hoist to provide a long fair lead. During all stringing operations, up to attachment of the download cable, the cable was kept clear of the ground, but in a low sag position.

The porcelain insulator assemblies were installed into the antenna from a timber stair-type platform on top of

each tower. They were lifted in timber frames by a stiff-leg derrick with blocks, Beebe hoist and 1,000-ft. of steel hoisting rope. After installation, timber frames were removed and aluminum corona shields installed.

Vertical downloads were installed from the ground at points near contact of the antenna to the ground when it was dropped to a position of extreme low sag. Ten pull-off towers were constructed to house counterweights to maintain correct perpendicular attitude of the downloads.

When sagging the antenna, two procedures were followed with respect to the vertical download. In one case, a weight was hung from the bottom of the download, calculated to produce a load equal to the final vertical reaction of the download on the antenna. In the second case, the horizontal download and the pull-off cable were properly attached to the vertical download and the whole assembly lifted. When the antenna was close to the correct sag, the counterweight in the pull-off tower was floated, automatically producing the correct download load on the antenna.

Pressure Relief Well Project

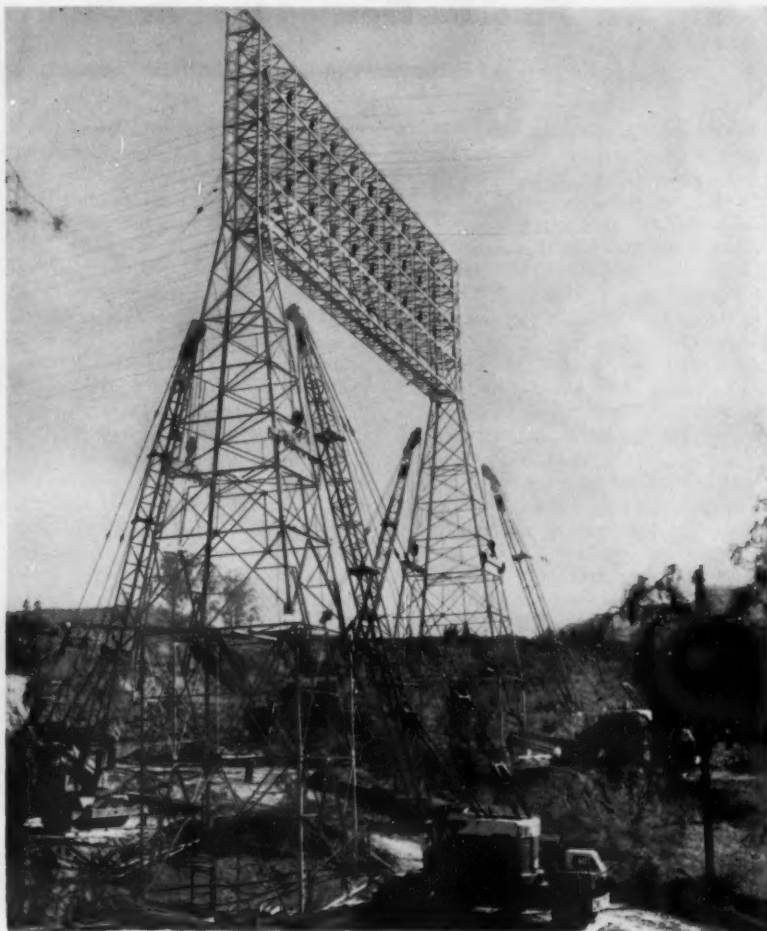
A system of 2,300 pressure relief wells is being installed along 150 miles of Mississippi River levees between Alton, Ill., and Cape Girardeau, Mo., to relieve excessive hydrostatic pressures which occur during high water periods, endangering levees by underseepage and sand boils.

About 900 wells have been installed under unit price contracts by the St. Louis District of the Corps of Engineers, which assigned direction and investigations of the project to the Waterways Experiment Station, Vicksburg, Miss. Several districts participated in exploration work.

Additional wells are expected to be placed under contract during this and the next fiscal year, with completion expected by fiscal 1958.



Towers for antenna spans for world's most powerful radio transmitter were built atop mountain ridges, saving extra height that would have been required.



Line Towers Are Lifted While Wires Are 'Hot'

Owl Truck & Construction Co., Compton, Calif., recently accomplished one of the biggest and most complex industrial lifting jobs on record in Southern California when it raised a Southern California Edison Co. multi-circuit steel bridge-type transmission tower at Eagle Rock.

The 77,000-lb. unit, a bridge 98 ft. long supported by two towers, was raised 7 ft. to provide greater clearance for the Colorado Freeway now under construction. The towers, one 130 ft. high and the other, being on a hillside, 116 ft. high, were lifted while the 66,000 volt lines were "hot" by four 35 ton truck cranes, working simultaneously.

Each tower was "broken" in the middle and raised sufficiently to enable Edison workers to bolt on the 7-ft. extension legs. More than 50 men were engaged in the operation which was done without incident and earned the praise of engineers and estimators as an efficient and expeditious job.

The Owl firm also made the site ready by dirt moving, tree clearing and anchor placing. W. G. Hopcraft, who directed riggers and crane crews, noted that the amount of preparation and thought involved far exceeded the work done in the actual "lift."

The circuits were not de-energized to avoid interruption of current to thousands of customers.



T. F. Scholes, Inc., A.G.C., Reading, Pa., did an outstanding job for the Reading Co. when it completed 8½ mi. of track under very adverse weather conditions within a tight deadline. Six

mi. were built in 19 working days in snow and cold weather, working right against the grading contractor, and the last half-mile was completed in 5½ hours.



Above is shown distribution of material and the laying of track on wet subgrade.

At left are shown tracks at Woodburne yard, which were built first. The other six miles were single track.

On the job, leading from Woodburne, Pa., to the Fairless Steel Works, 40 carloads of mainly frozen ballast were handled each day, requiring maximum efficiency on the part of the contractor, and the employment of highly specialized equipment.

Wins Race With Time And Death

An Actual Job Report from



New Highway Ends Traffic Danger at Atomic Plant

PORTSMOUTH, OHIO: — safely carry the increased traffic of the 40,000 new families expected when the new Atomic Energy Plant is completed near here. Ward's contract covered cutting more than 312,000 cubic yards of earth and rock off steep Four Mile Hill and filling a third the expected time. Ward's fast work speeded completion approaches to an overpass a mile away. It was expected to take six months, but today... way replacing an old narrow, twisting road which could not

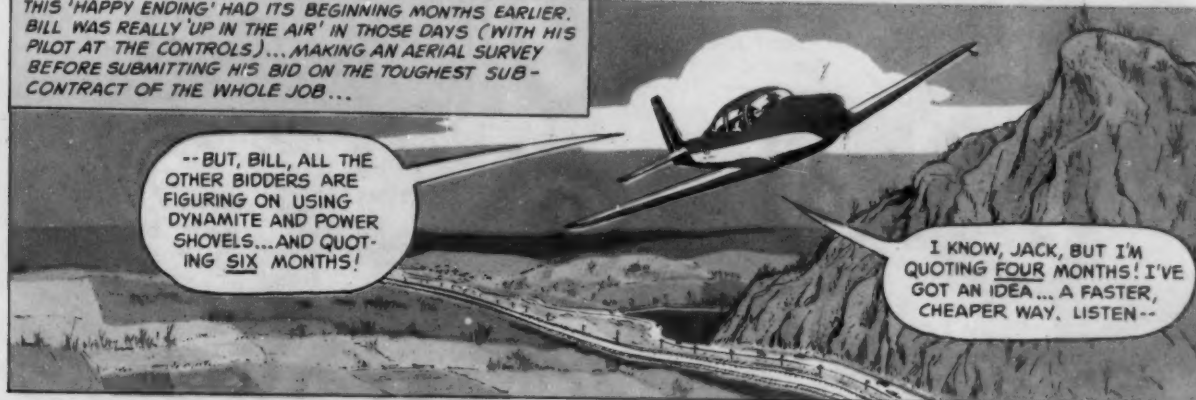
WELL, THERE SHE GOES, BILL... THE LAST LOAD OF 'THE JOB THAT COULDN'T BE DONE!' AND TWO MONTHS AHEAD OF SCHEDULE, THANKS TO THAT IDEA OF YOURS!



THIS 'HAPPY ENDING' HAD ITS BEGINNING MONTHS EARLIER. BILL WAS REALLY 'UP IN THE AIR' IN THOSE DAYS (WITH HIS PILOT AT THE CONTROLS)... MAKING AN AERIAL SURVEY BEFORE SUBMITTING HIS BID ON THE TOUGHEST SUB-CONTRACT OF THE WHOLE JOB...

--BUT, BILL, ALL THE OTHER BIDDERS ARE FIGURING ON USING DYNAMITE AND POWER SHOVELS...AND QUOTING SIX MONTHS!

I KNOW, JACK, BUT I'M QUOTING FOUR MONTHS! I'VE GOT AN IDEA... A FASTER, CHEAPER WAY. LISTEN--



WARD GETS THE TOUGH JOB, AND, SOON, AT THE ROCKY, RUGGED 520-FOOT PEAK--

HOW DO YOU PLAN TO HANDLE ROCK THIS BIG WITHOUT BLASTING? ONLY A MOUNTAIN-GOAT COULD GET AROUND UP HERE!

--OR A GOOD CRAWLER. LOOK -- I'M COUNTING ON INTERNATIONAL TD-24S TO LICK THIS PART OF THE JOB.



INSIDE A WEEK, HANGING ONTO THE STEEP SLOPE, THE BIG TD-24 CRAWLERS CUT DOWN TO THE 400-FOOT LEVEL, MAINTAINING 1½ TO 1 GRADE. THEN THEY HACK OUT A BENCH SO THAT THE INTERNATIONAL SCRAPERS CAN BE BROUGHT IN.

THERE'S YOUR IDEA AT WORK, BOSS -- PUSHLOADING AT 400 FEET WITH TD-24S AND SCRAPERS.

THOSE BIG RIGS CAN SURE TAKE PUNISHMENT!



AT 300 FEET, THE GRADE LESSENS. PHASE 3 BEGINS. NOW, INTERNATIONAL TWO-WHEELED, RUBBER-TIRED TRACTORS AND SCRAPERS TAKE OVER, AND THE CUTTING AND CARRYING REALLY SPEEDS UP...

WE'RE REALLY ROLLING, BOSS... AND THOSE INTERNATIONALS ARE GAINING A LOAD AN HOUR ON OUR OTHER RIGS!

GREAT, ED. IT LOOKS AS THOUGH WE'RE IN -- BUT KEEP PUSHING!



IT'S A MILE HAUL FROM THE CUT TO THE FILL FOR THE OVERPASS -- DOWN-HILL LOADED AND UPHILL BACK--AND A RAILROAD CROSSING EACH WAY!



UNEXPECTEDLY, TRAFFIC ON THE RAILROAD DOUBLES...
JUST AS THE FAST INTERNATIONAL RUBBER-TIRED RIGS
START THE OVERPASS-FILL ON THE OTHER SIDE OF THE TRACKS!



LOOK AT THAT... THE 18TH
LONG COAL TRAIN TODAY! AND,
YESTERDAY, THEY COST
US 2½ HOURS--

I DIDN'T FIGURE
THIS IN MY BID. BUT
THOSE INTERNATIONALS
HAVE PUT US
WAY AHEAD.

C'MON,
C'MON...
LET'S GO!



WE'RE THE ONLY
OUTFIT WORKING
TODAY. RAIN CAN'T
STOP THIS CREW!

ONE MIDNIGHT, AS THE JOB GOES
INTO THE 'HOME-STRETCH'...



GOT TROUBLE,
SHORTY?

NO TROUBLE, BOSS, JUST
REGULAR GREASIN'. STILL
NO DOWNTIME ON THIS JOB!

AND THEN THE WARD OUTFIT SETS ANOTHER RECORD, IN SPITE OF THE TRAINS... 8,400 CUBIC YARDS MOVED
IN 9 HOURS ON AN 8,000-FOOT CYCLE, USING 7 HAUL UNITS! TWO MONTHS FROM THE STARTING DATE,
THE JOB IS FINISHED, AND...



HALF THE FIGURED TIME,
MR. WARD! ON THIS JOB,
WHEN YOU SAVED DAYS,
YOU SAVED LIVES, TOO!

IT WAS PART LUCK, ALL
RIGHT... BUT I GIVE THAT
CREW OF MINE GOOD
EQUIPMENT, AND THEY
MAKE THEIR OWN BREAKS!

Head in the clouds, feet on the ground

BILL WARD, owner of the Construction Service, Inc., Ludlow, Kentucky, is a man with his head in the clouds... but only when he's making an aerial survey of a prospective job in his four-place Navion plane. The rest of the time his feet are very firmly planted on the ground, when it comes to getting things done in the contracting business.

Starting as a shovel runner in New England for B. Perini & Sons, Inc., Framingham, Mass., Bill worked up to superintendent. In 1945 he realized an 18 year ambition by going into business for himself with a single power shovel. On the Four Mile Hill subcontract he used 20 big pieces of earth-moving equipment, including six INTERNATIONAL crawlers with matched INTERNATIONAL dozers, two INTERNATIONAL B-170 scrapers, and three INTERNATIONAL two-wheeled, rubber-tired tractors and scrapers.

He's proudest of the fact that he won the 1952 Safety Award given by the West Virginia chapter of the A.G.C. Association in the 10-20,000 man hours per year class for not having a single lost time accident. In 1953 he again finished out the year with a similar safety record. That's a real tribute to Ward, his men, and his big red INTERNATIONAL Power!

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

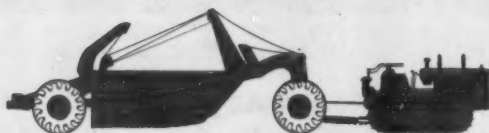


INTERNATIONAL

POWER THAT PAYS

Now All in One Family

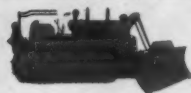
The hardest-working work teams in the world!



TD-24 crawler with matched scrapers



TD-18A crawler with matched scrapers



TD-24 crawler with bulldozer



T-9 and TD-9 crawler with hydraulic bulldozer



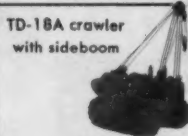
T-6 and TD-6 crawler with hydraulic bulldozer



TD-14A crawler with cable bulldozer



TD-9 tractor with front-end loader



TD-18A crawler with sideboom



Model 2T-75 two-wheel, rubber-tired tractor with 18 heaped-yard capacity scraper



Model 2T-75 two-wheel, rubber-tired tractor with 20 heaped-yard capacity bottom dump wagon



Model 2T-55 two-wheel, rubber-tired tractor with 13 heaped-yard capacity scraper

» THE BUILDING Research Institute's board of governors has authorized an ambitious program designed to expand the activities of the institute and insure its improvement and future growth.

The program, announced by Executive Secretary William H. Scheick, will bring the institute in closer "partnership" with the Building Research Advisory Board, which Mr. Scheick also heads as executive director.

"At B.R.I.'s first meeting since the new program has gone into effect, to be held in Hershey, Pa., May 24-25, the institute will take over most of the activities of B.R.A.B., except the advisory function," Mr. Scheick said.

Rounded Program

In a memorandum to B.R.I. members, he described the working relationship between the two agencies of the National Research Council as follows: "The institute and B.R.A.B. now share responsibilities for research conferences in a completely rounded program. B.R.A.B. will handle conferences on the broad (and sometimes more academic) technical subjects, while the institute will be responsible for those on specific products of the industry."

The chief purpose of the new program is to make the institute an all-industry forum of research-minded men who will take an active part in directing research in the building industry. The move would increase membership and place responsibility on those "who place first in their minds the importance of continually improving buildings," Mr. Scheick said.

B.R.I. is not considered a duplication or substitute for professional societies, technical bodies or trade associations in the industry, but rather as a liaison agency to help these industry groups carry on their specialized work, he added.

The institute is designed to bring together these groups and let them see first hand the latest technical achievements and problems of interest to the whole industry.

At the Hershey meeting members will visit the laboratory of the Armstrong Cork Co., at Lancaster. The program will also include problems of design and engineering in light building construction, large buildings, and industrial buildings.

B.R.I.'s fall meeting will be held in Washington, D. C., Oct. 27-28 during the next institute conference on the uses of plastics in building. Last Oc-

Building Research Institute Expands Scope

• Industry Forum Will Take Over Much of B.R.A.B.'s Work

tober the institute conducted its first conference on porcelain enamel in the building industry, with favorable comments from those who attended. More such conferences on building materials and products are planned.

Building Science Directory

A new activity of B.R.I. reported by Mr. Scheick is the compilation of a building science directory to show what is being done by various groups in the industry and to develop sources for a periodical bulletin which is expected to be published beginning next year.

He also announced the beginning of an associate membership status for those persons interested in building technology but not directly engaged in the industry.

At the same time, Mr. Scheick announced a revised dues schedule "appropriate for expanded membership" in the institute.

In the monthly newsletter published by B.R.A.B. in April, it was announced that the board's climatic research com-

mittee is beginning a survey of its membership to determine what kind of weather data would be helpful to groups in the building construction industry.

Chairman of this committee is Miles Colean, a consulting construction economist of Washington, D. C. Representing the A.G.C. is W. A. Snow, manager, Building Division.

The newsletter also carried accounts of recent developments in the control of condensation in building; in school and hospital design research; Housing and Home Finance Agency reports on climatic data for home construction; and recent publications on building technology.

On April 13 President Eisenhower named Normal P. Mason, president of B.R.I. and a member of B.R.A.B., acting commissioner of the Federal Housing Administration. William Muirhead, Muirhead Construction Co., Durham, N. C., secretary-treasurer and past president of the A.G.C., is also a member of B.R.I.'s board of directors.

HHFA Publishes Book on Modular Method

• A.G.C. and Others Advised Agency on Writing Pamphlet

» THE HOUSING and Home Finance Agency published last month, for the specific use of construction superintendents and foremen, a 22-page booklet explaining modular coordination and showing how this system of standardizing building materials can save contractors and owners time, money and material.

Entitled *Building Better from Modular Drawings*, this pamphlet was written by William Demarest, Jr., secretary for modular coordination, of the American Institute of Architects, on loan to the HHFA. In the book Mr. Demarest defines "modular coordination" as the standardization of building materials on a uniform basis of measurement (the 4" module) that can simplify the work of the building materials manufacturer, the architect and the contractor, and in the end save the owner money.

The booklet is illustrated with simple, explanatory drawings and step-by-step blueprints. Presented in a straightforward manner, the publication shows how modular drawings are

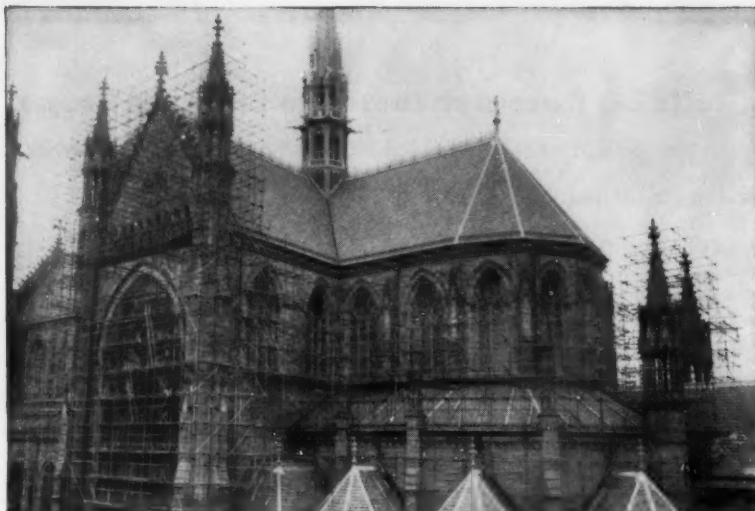
dimensioned and how jobs may be drawn up for such drawings. It also shows how these drawings differ from non-modular ones, and how this difference brings about efficiency and economy in building.

A.G.C. Praises Booklet

HHFA extends its appreciations to the joint committees of The Associated General Contractors of America, Inc., the Producers Council, Inc., and the A.I.A., as well as to the individual contractors and superintendents who reviewed and offered helpful comments on a preliminary issue of the publication.

The A.G.C., on reviewing the book, said it "should eliminate, whenever a project of modular design is undertaken, any misconceptions or hesitation on the part of construction superintendents, foremen and skilled tradesmen in the field. We feel that it will assist general contractors and their key construction personnel in obtaining a better understanding of the prac-

(Continued on page 73)



NETWORK OF STEEL scaffolding surrounds Cathedral of the Sacred Heart, Newark, N. J., providing safe footing for workmen who are repointing the entire stone exterior. More than 67 miles of PS Co. Scaffold was erected. Contractor is George A. Fuller Company.

353,760 Feet of Scaffold Helps Complete Cathedral

ONE OF THE LARGEST and most complicated scaffolding installations ever erected in the East employs 353,760 ft of TubeLox® Scaffolding and 1,200 "Trouble Saver"® Sectional Steel Scaffolding frames to support stonemasons and materials involved in completing the unfinished Cathedral of the Sacred Heart, Newark, N. J.

The "shell" of the Cathedral was constructed 50 years ago, then left unfinished. Stonework had deteriorated during the interval. Chesebrough-Whitman Company, Inc., supplied and erected the PS Co. Scaffolding for all inside installations and for enclosing the entire exterior, including the towering 200 ft spires. A 100 ft "Gold Medal"® Steel Hoist Tower was erected inside the Cathedral for raising materials to the walls and vaulted nave.

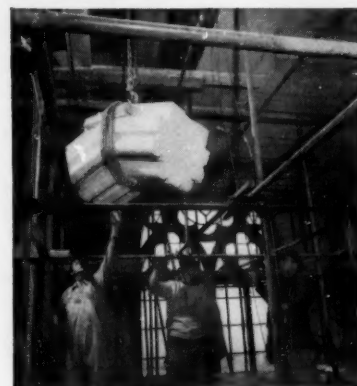
Inside the 277x140 ft Cathedral, Prof. Gonippo Raggi & Sons, Orange, N. J., employed 90 ft "Trouble Saver" Rolling Scaffolds to reach

high window areas for specialized stained glass work. When these scaffolds were removed, sturdy TubeLox Scaffolding was installed to support the 86 ft high stone arches, located over the nave, crossing and transepts. These three areas were covered with scaffold laid out to support loads of 1000 lbs per lineal foot. Indiana limestone was used throughout for walls, columns and arches. The main scaffold was used for centering of arches and as a storage deck for the stonework, which weighed 162 lbs per cu ft.

All PS Co. Scaffolding provided separate level platforms, which placed materials and men—directed by construction superintendent James Taylor and the stone setting contractor Robert L. MacLean—at the levels required by each job. Only PS has the right scaffolding for every job, big or small. That's why, for the best equipment for any job, you should do as thousands of contractors and sub-contractors do—when it comes to scaffolding, come to PS.



1½-TON KEYSTONE of Indiana limestone is readied for lifting on the "Gold Medal" Hoist Tower. It will be raised 95 ft and installed in a nave arch.



86 FT ABOVE THE FLOOR, stonemasons stand on TubeLox Scaffolding as they guide keystone being lifted last few feet prior to being set. Scaffolds were also built to the same height in nave and transepts.



SAFE FOOTING for these workmen—viewed through a 36 ft clerestory arch—is provided by "Trouble Saver" Sectional Steel Scaffolding. They are covering a 34 ft aisle arch with Gustavino tile.

PS offers you a complete nation-wide engineering service—available locally. To buy or rent PS Scaffolding, see the Yellow Pages in your 'phone book for the nearest "Gold Medal" office or representative.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY



THE **PATENT** **S**CAFFOLDING CO., INC.

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Branches in all principal cities

(Continued from page 71)

tical application of the modular method in the construction of buildings."

A.I.A.-A.G.C. Joint Cooperative Committee, at the September Board Meeting in Chicago, recommended and encouraged wide distribution throughout the building industry of the booklet, "thereby exerting further promotion and education on this subject." The joint committee then passed a motion encouraging producers of building materials to manufacture more modular materials with an emphasis on uniform dimensions, and closer tolerances in masonry and clay products.

P.C.-A.G.C. Joint Cooperative Committee, meeting later that month in Pittsburgh, complimented Mr. Demarest on his booklet, which was said to be "well prepared."

Last month the Building Division of the A.G.C. mailed copies of the booklet to all of its 3,500 building contractor members.

THE CONSTRUCTOR two years ago carried a series of articles on modular coordination to familiarize members with this relatively new standardizing system and to help "iron out" some initial difficulties in applying it. Mr. Demarest wrote in the May, 1952 issue a lengthy article in which he said that the modular system "takes the guess work out of building." He added further that making modular additions to non-modular structures would present no new problems to contractors.

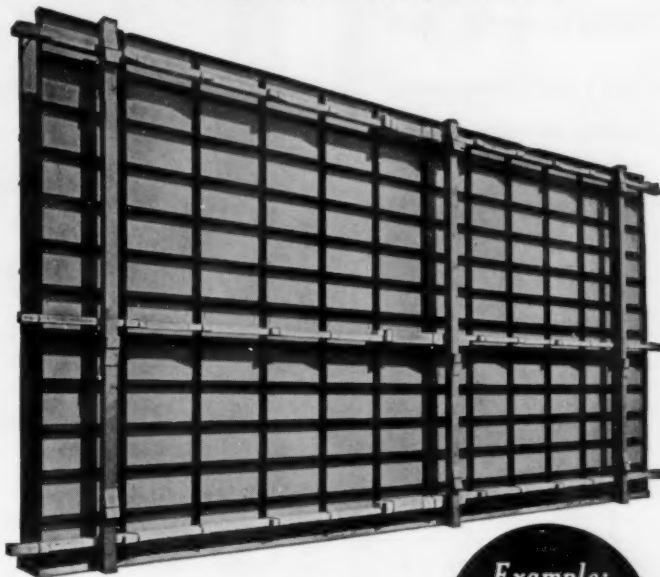
It seems that the more contractors who become familiar with the modular method, the more proponents this system has. This book written by Mr. Demarest and published by HHFA should convert more contractors to the merits of this fast-growing system.

Agriculture Secretary Ezra Taft Benson announced this spring that the farm storage facility and equipment loan programs, under which farmers can borrow a large part of the cost of building or buying additional storage space and drying equipment will be continued for another year.

With average weather, 1954 production, plus a record carry-over of last year's crops, point to "the most serious" storage problems ever faced, Secretary Benson said.

THE CONSTRUCTOR, MAY 1954

UNI-FORM Concrete Forms GUARANTEE Material and Labor Savings on Your Concrete Jobs!



Example:

This wall—24 ft. long x 12 ft. high can be UNI-FORMED for 50% less than with conventional forms.

- ONE SIDE ALIGNMENT and BRACING SAVES UP TO 50% MATERIAL and LABOR
- USE STANDARD LUMBER LENGTHS—NO CUTTING OR FITTING—GET MAXIMUM LUMBER RE-USE
- SIMPLIFIED ASSEMBLY permits inexperienced crews to form fast . . . accurately . . . no waste motion

Universal Concrete Form Specialists will assist your men On The Job TO INSURE MAXIMUM FORMING SPEED...EFFICIENCY...SAVINGS

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SLOANE QUANTITY SURVEYS

FOR ALL
CLASSES OF CONSTRUCTION

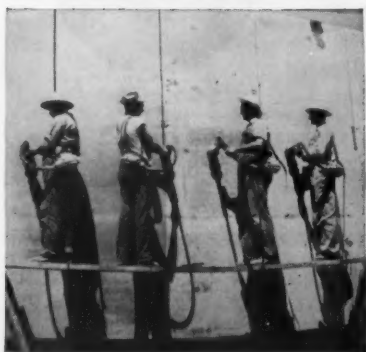
- Large staff of engineers
- Speed, accuracy, full detail assured
- Reasonable fees, pre-fixed

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and Federal, State and
Municipal Authorities

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415 LEXINGTON AVE., NEW YORK 17

DEPENDABLE SURVEYS SINCE 1922

"BERG" CONCRETE SURFACERS



"BERG" Concrete Surfacers are used extensively for surfacing concrete buildings, bridges, dams, walls, roads, streets, airport runways and other applications.

"BERG" Heads and Attachments are interchangeable, thereby providing adaptability for vibrating, grinding, wire brushing, sanding and polishing applications.

THE CONCRETE SURFACING MACHINERY COMPANY

4665-69 SPRING GROVE AVE.
CINCINNATI 32, OHIO

BUILDING

Wire Fabric Used in Skyscraper Floors



Worker adjusts wire fabric prior to pouring of 16th floor.

The Mile High Center in Denver, scheduled for completion this summer, will save 30% of floor dead load and reduce structural steel and foundation requirements with the use of air-entrained lightweight structural concrete floors reinforced with welded wire fabric.

The 23-story skyscraper is one of the first large buildings in the Rocky Mountain area to use this type of weight-saving floor construction.

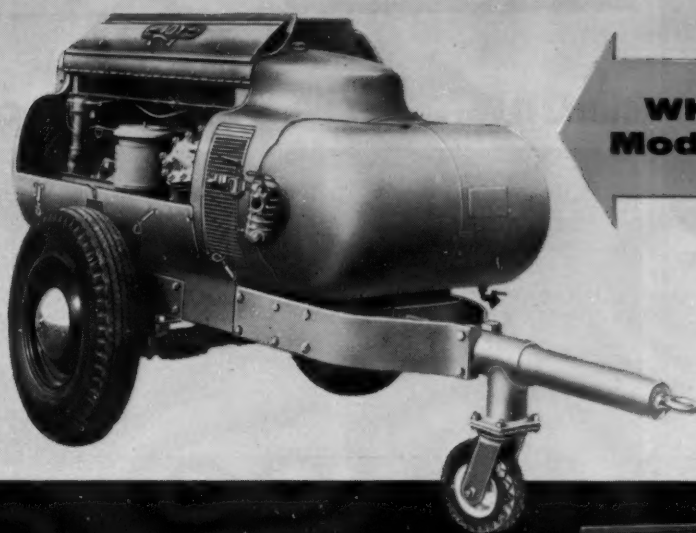
Poured concrete floor slabs, four inches thick and made with an expanded clay aggregate capable of developing to a strength of 2,500 psi, are going into the building.

A saving in cost results from the use of lightweight aggregate in thin slabs and less reinforcing steel made possible by the welded wire fabric.

Webb and Knapp, Inc., are the developers of the structure, which is being built by George A. Fuller Co.



Expanded clay lightweight aggregate concrete being poured by crew.



**WK-80
Model 125**

**WK-80
Model 75**



JOY announces **2** NEW LARGER SIZES OF PORTABLES

... not "just speeded up", but built specifically to furnish today's higher air requirements while maintaining yesterday's slower speeds.

These two new portables incorporate the outstanding features of the complete line of Joy Portables (now 75 to 630 CFM) ... low piston speeds, direct-concentric valves, two stage compression, full force-feed lubrication, compact lightweight construction.

Write for complete details—ask for Bulletin A-55.

• Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa. In Canada: Joy Manufacturing Company (Canada) Limited, Galt, Ontario.

Consult a Joy Engineer

OR YOUR NEAREST JOY DISTRIBUTOR



LEADING CONTRACTORS USE McCarthy Drills



PUBLIC UTILITY AUGER DRILL

Bore holes from 4 1/2" to 24" in diameter under sidewalks, roads, building foundations, railroad tracks, landscaped grounds, etc. Fithian Contracting Co., Youngstown, O., using McCarthy Public Utility Auger Drills, completes pipe line jobs, formerly taking weeks, in a few days.



SELF-PROPELLED HORIZONTAL AUGER DRILL

Will bore 6" and 8" diameter holes 120 feet horizontally at rate of six feet per minute maximum. Four individual, self-locking jacks maintain correct drilling level. In one day a New Castle, Pa., operator bored holes of various depths totaling 840 ft. through shale and sandstone, using this McCarthy Auger Drill.

**Heavy-
Rugged
Powerful**



VERTICAL AUGER DRILL

Operating men who have made actual on-the-job tests find the McCarthy Vertical Auger Drill a standout for mobility, stamina, ruggedness and versatility. On a 2-million dollar, 5-mile stretch of superhighway between Hubbard, Ohio, and Sharon, Pa., The Apex Powder Co., Canton, Ohio, cut blasting costs approximately 20% as compared to air, well or churn drilling. Cutting through two large areas of concentrated rock, 150 holes 15 feet deep were bored for each blasting pattern. 3,000 cubic yards of sand rock were moved at each blast. Due to the ruggedness and mobility of McCarthy Drills, there was no time lost. For further information, write Salem Tool Co. and our distributor will contact you.



DRILLING EQUIPMENT
SINCE 1901

THE SALEM TOOL CO.

809 SOUTH ELLSWORTH AVE.
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APPRENTICE TRAINING

Calif. Apprentice Wins Bricklayers' Contest



A kiss is given by Mrs. Robert Ohran, to her husband who won the final contest during the sixth annual national bricklaying apprentice contest in Los Angeles to become the national champ. Looking on, left to right, are Elbert Pickard, Biloxi, Miss., fourth-place winner; W. F. Roark, S.C.P.I.; and Billy Joe Hudson, Dallas, third-place winner. Not shown in picture was James Jameson, Los Angeles, second-place winner.

» A YOUNG apprentice from San Jose, Calif., won top honors, plus the \$500 first prize, in the sixth national Apprentice Brickmason Competition held in Los Angeles, April 1-6.

Robert Ohran, the winner, will also spend a week's vacation at the Del Coronado Hotel, Coronado (Calif.) as a guest of the Structural Clay Products Institute. Robert, 21, who has trained only 16 months in the trade, won over 30 contestants from 14 states and the District of Columbia. He is married and has an infant daughter.

Second place honors and prize money of \$300 went to James Jameson, Los Angeles; while third place money of \$200 went to Billy Joe Hudson, of Dallas; and fourth place, with its \$100 prize, was awarded to Elbert Pickard, of Biloxi, Miss.

During Industries Show

The bricklayers' contest is sponsored each year by the Bricklayers, Masons and Plasterers International Union and is held in conjunction with A.F.L.'s annual Union Industries Show. It was estimated that more than one half million people attended the industries show held this year in Los Angeles' Pan-Pacific Auditorium.

Harry C. Bates, Washington, D. C., president of the Bricklayers International, called a press conference following the contest to express the union's "appreciation to all who have shown their interest in the trade, in

the outcome of the contest, and in the future of these young men and their industry."

Many of the local and state contests, which produced the national finalists, were sponsored jointly by A.G.C. chapters and bricklayers' locals.

Eastern Seaboard Conference

The 10th Annual Eastern Seaboard Apprenticeship Conference will be held in Manchester, Vt., May 26-28, it was announced last month by conference officials.

Arranged by the Vermont Apprenticeship Council and the Bureau of Apprenticeship, the conference will bring together leaders from government, education, labor and management groups to discuss how apprenticeship in the skilled crafts can supply the necessary skilled labor for the nation's industries.

Some of the principal speakers at the conference include Republican Senator Ralph E. Flanders of Vermont; Assistant Secretary of Labor Rocco C. Siciliano; Vermont Governor Lee E. Emerson, and Lieut. Gov. Joseph B. Johnson; W. F. Patterson, director of the Bureau of Apprenticeship; and W. A. Snow, manager of the A.G.C.'s Building Division.

Scheduled for three days the meeting will devote separate sessions to training in construction and other leading industries.

New Apprentice Standards

A revised edition of the *National Standards for Carpentry Apprenticeship* was published recently by the Bureau of Apprenticeship with the cooperation of the National Joint Carpentry Apprenticeship Committee.

The committee, made up of representatives from the United Brotherhood of Carpenters and Joiners of America and The Associated General Contractors of America, in recommending changes in the standards, revised and amplified those last published in 1948. The booklet is designed to guide local joint apprenticeship committees, in directing apprenticeship programs, as well as contractors and labor groups in establishing additional committees and programs.

Stresses Uniformity

One chief purpose of the booklet is to establish "a uniformity of training that will assure a high standard of efficiency and service" for apprentice carpenters, regardless of their locality of training, the committee said.

The booklet also explains the local application of the standards, and gives a sample apprentice record-keeping form. Included also are the regional offices of the Bureau of Apprenticeship and state apprenticeship agencies for those contractors and labor representatives who may wish assistance in setting up their programs.

Copies of the booklet may be obtained free of charge by writing to the national A.G.C. office, Washington, D. C., or the Bureau of Apprenticeship, U. S. Department of Labor, Washington 25, D. C.

Reniger Replaces Weitz

Secretary of Labor James P. Mitchell recently appointed Henry A. Reniger, Reniger Construction Co., A.G.C., Lansing, Mich., to succeed R. W. Weitz, Des Moines, as a member of the National Joint Bricklaying Apprenticeship Committee.

Mr. Weitz, of The Weitz Co., A.G.C., resigned his position on the committee late last year prior to becoming director of maintenance in the Department of Defense, Jan. 1.

Mr. Reniger has been active in bricklayer apprenticeship for years in his home state of Michigan and has done much to develop training programs there.

THE CONSTRUCTOR, MAY 1954

Fewer man-hours on the job!



FIBRE FORMS

for
round
columns
of
concrete

Sonotube Fibre Form being placed in position during construction of Pierce and Phelps Co. building, Philadelphia, Pa. Robert E. Lamb Company—contractors.



(photo by E. Troiani)

SONOTUBE Fibre Forms for concrete columns take fewer men to handle because they are lightweight . . . take less time to erect because they require minimum bracing.

Widely used and approved by contractors, engineers and architects everywhere, SONOTUBE provides a fast, economical method of forming round columns of concrete for a multiplicity of structures.

SONOTUBE forms can be supplied in specified lengths or sawed to your requirements on the job. In 31 sizes, from 1" to 36" I.D. up to 24' long. Longer on special order.

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A PAGE FROM THE AERO *Commander* CUSTOMER LIST

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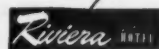
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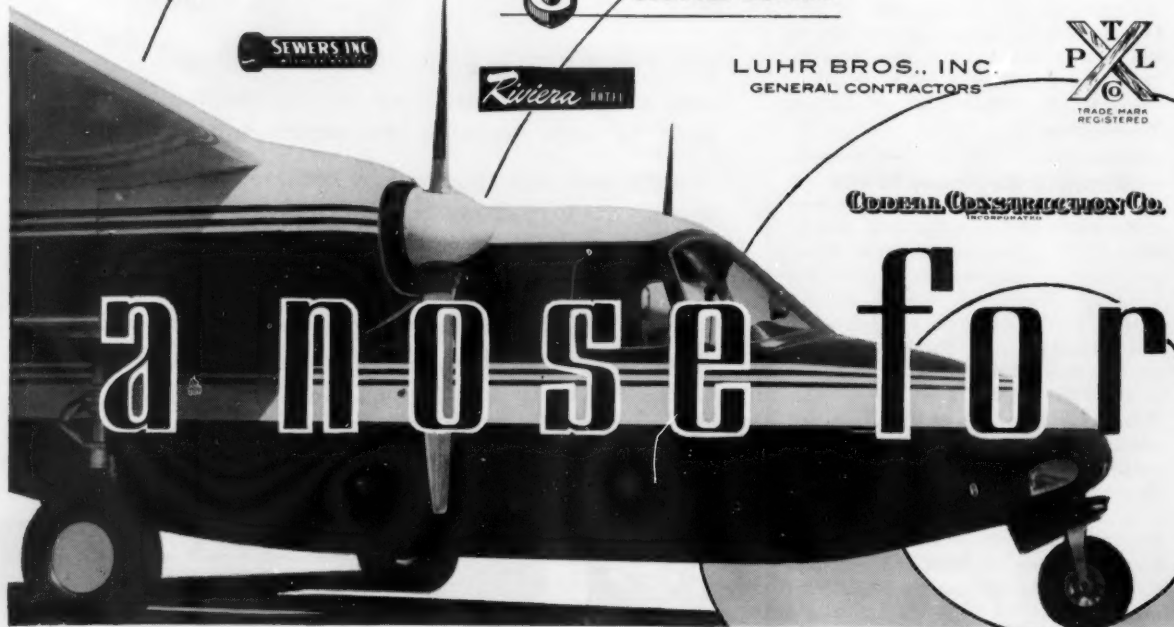
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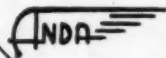
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Machine Accounting Saves Time, Money for General Contractor

By D. Bryce Curwin

Office Manager, The R. S. Ursprung Co., Cleveland, Ohio

» WE SCARCELY know how to begin describing this new machine accounting system of ours. Words like "revolutionary," "incredible," and "fantastic" keep running through our mind. And that's just the way we feel about it.

Maybe the best thing to do is to take each accounting job and tell you how it's done by machine. We're saving over \$250 a month in bookkeeping labor costs, but this is a very minor consideration in comparison to the *kind of information*, the up-to-date-ness, and the accuracy of the records we have now.

Job Costs

Here's a good one to start off with. When we had a pen-and-ink system, we kept job costs; I guess everyone does. But they were *not* broken down by classification; though we attempted to do it, we just couldn't get the figures in time to be of any real value. Also, we did *not* balance to any book figures.

This nightmare operation has now been transformed into the smoothest set-up imaginable. Glance if you will at the illustration of original Accounts Payable entries, the one with the "distribution tickets" at the left side. Notice that, as a by-product of posting invoices to our Accounts Payable Ledger, these distribution tickets are created.

Each distribution ticket shows the amount, job number and account number to which the dollar amount is to be distributed. "51,041" means job number 51-41; ".07" means account number 7 within that job. Some distribution tickets will indicate, of course, a General Ledger account instead of a job cost.

After posting Accounts Payable, the total amount distributed to job costs (given by the machine) is posted to a Job Cost Control Account. The total of tickets to be distributed directly to General Ledger is also kept in a memorandum account.

Once a week, distribution tickets are sorted down, by job by classification, and posted by machine directly to the "Material" column on the Cost Records (see illustration). The total given by the machine must tie in with the material total for the week shown in the Job Cost Control.

Similarly, labor is distributed directly from the Payroll to the "Labor" column on the Cost Records, and any Sub-Contract work is also entered, from the sub-contractor's invoice. *Total* labor and sub-contract is posted to the Job Cost Control. Note that the machine (a National "Class 31") automatically computes and prints up-to-date balances for Labor, Material, Sub-Contract and Miscellaneous, as well as the total balance for each Cost Record ledger card.



Author Curwin posts General Ledger on machine, which varies from \$3,400 to \$5,400 in cost. National Cash Register Co. sells one machine which performs needed operations in most cases for about \$4,500. Initial cost of forms would be \$300 or \$400. Depreciated on a 10-year basis, equipment would cost about \$450 a year, the company states.

At the end of the month, a trial balance is taken of the *total balance* on each Cost Record and proved to the total balance on the Job Cost Control. It is always tied in without the slightest difficulty.

Sub-Contract Account

Please take a look now at the illustration of our machine-posted Sub-Contract Account (page 82). One of these accounts is kept for each sub-contractor. As many who are reading this know (only too well!), it is exceedingly difficult sometimes to keep track of all sub-contractors' accounts under a pen-and-ink system. At least we found it so. We had no record of either the unpaid or uncompleted balances, and overpayments occurred. There were so many figures to handle that errors could not be avoided. Our records were always sort of "halfway" in proof—and almost never completely up to date.

Note the manner in which our machine record takes care of the whole job for us. To-date balances for Billings, Payments, Uncompleted, and Unpaid Balance are automatically figured and *proved* each time a posting is made.

Our sub-contractors' accounts are now not only up to date, but they are 100 per cent accurate as well. Overpayments can never occur, because the machine would automatically print a *red balance* in the "Uncompleted" column if we inadvertently started to pay too much. (The posting to the sub-contractors' accounts always takes place before checks are mailed out).

Accounts Payable

As you can see in the illustration of forms, the Accounts Payable ledger and the Accounts Payable Journal are created at one writing; distribution to tickets is also accomplished at the same time, as mentioned before. The balance on each ledger card is, of course, automatically computed and printed by the machine; the journal columns are automatically added while posting.

When amounts are paid, the Cash Disbursements Journal, Remittance Advice and Check are written at the same time that the debit is made to the individual Accounts Payable ledger, as illustrated. Again the balance for each vendor's account is printed by the machine, and the disbursements journal automatically totaled.

Since all records are made simultaneously, there is no problem of "tying them in" later on. For instance,

JAN 15 '51 51.041, 7.00
13.722
34359
JAN 15 '51 52.008, .46
323
730000
JAN 15 '51 53.065, 7.00
24901
17.9
JAN 15 '51 51.041, 7.00

ACCOUNTS PAYABLE										
PROOF	NAME	EXPLANATION	DATE	REF. #	AMOUNT DEDUCT	ENC.	PAYMENT	NET BALANCE	OLD BALANCE	PROOF
	HOME LUMBER COMPANY B. G. ANDREWS COMPANY FREEWAY EXPRESS INC. CITY ELECTRIC CO		JAN 15 '51	13.722	34359			830.152	8355.79	.00
			JAN 15 '51	323	7300.00			11,300.00	4000.00	.00
			JAN 15 '51	24901	17.9			2.018	16.33	.00
			JAN 15 '51	4840	3.85					.00
	7664591 H									
	7664591 H									
NAME: CITY ELECTRIC CO.										
ADDRESS: 10 MAIN STREET, CLEVELAND, OHIO										
EXPLANATION	DATE	REF. #	AMOUNT DEDUCT	ENC.	DEDUCTIONS	NET BALANCE	OLD BALANCE	PROOF		
	JAN 15 '51	2.942	5.74			5.74	5.74	.00		
	JAN 15 '51	2.742	2.89			7.83	7.83	.00		
	JAN 15 '51	2.801	6.41			14.24	14.24	.00		
	JAN 15 '51	12.1		2.11	12.10	.00	14.24	.00		
	JAN 15 '51	2.791	7.10			7.10	7.10	.00		
	JAN 15 '51	4.171	9.23			16.33	16.33	.00		
	JAN 15 '51	4.840	3.85			20.18	20.18	.00		

Above, job cost distribution is made to perforated tickets (left) at same time Accounts Payable Ledger and Account Payable Journal are posted. Machine automatically computes balances to date and accumulates all posted figures.

The R.S. SPRUNG Co.
GENERAL CONTRACTORS
100 HANCOCK BUILDING, CLEVELAND 14, OHIO

PAY TO THE ORDER OF: **PETER SLAG COMPANY**
UPPER VALLEY ROAD
BEREA, OHIO

DATE: JAN 15 '51
AMOUNT: 465.50

THE CLEVELAND TRUST COMPANY
MAIN OFFICE - CLEVELAND, OHIO

DETACH BEFORE DEPOSITING

IN FULL, MAY 30TH STATEMENT.

ACCOUNTS PAYABLE										
PROOF	NAME	EXPLANATION	DATE	REF. #	AMOUNT	ENC.	PAYMENT	NET BALANCE	OLD BALANCE	PROOF
			JAN 15 '51	11.6	184.03		3115.49	.00	830.152	.00
			JAN 15 '51	11.6			300.00	230.00	11,300.00	.00
			JAN 15 '51	17.0			17.9	.00	11.19	.00
			JAN 15 '51	12.1	2.11		12.1	.00	14.24	.00
			JAN 15 '51	12.2	9.50		465.50	.00	475.00	.00
NAME: PETER SLAG CO.										
ADDRESS: UPPER VALLEY ROAD, BEREA, OHIO										
EXPLANATION	DATE	REF. #	AMOUNT	ENC.	DEDUCTIONS	NET BALANCE	OLD BALANCE	PROOF		
	JAN 15 '51	1.203.6	135.50			135.50		.00		
	JAN 15 '51	1.200.6	43.60			179.10	155.50	.00		
	JAN 15 '51	1.61.95	103.00			282.10	179.10	.00		
	JAN 15 '51	1.62.01	192.90			475.00	282.10	.00		
	JAN 15 '51	1.22		9.50	465.50	.00	475.00	.00		

Above: Check, Remittance Advice, Accounts Payable Ledger and Cash Disbursements Journal are written simultaneously when payments are made. Below are shown Cost Record Forms, to which data are posted directly from other forms.

in posting the invoices, all it is necessary to do is to first run an adding machine list of the net amounts. When entries are made to the ledger accounts, the machine automatically accumulates the net amount of each entry (as well as gross amount and discount). If the machine net total agrees with the adding machine total, you not only know that postings are correct, but that they are correct on all records.

Payroll

The Payroll is a good example of the "correct on all records" idea just mentioned. As the illustration shows, the Payroll Journal, Earnings Record, and Employee's Pay Statement are all done at the same time—so if one record is correct, all are correct. If we had a check payroll, the check and Check Register could be done at same writing.

Notice that the machine not only computes and prints gross and net pay for each employee, but also prints up to date balances for Earnings, With-

3-CARPENTRY WORK COST RECORD JOB NO. 53-46									
DATE	NET	CURRENT	TO DATE	DATE	NET	CURRENT	TO DATE	BALANCE	PROOF
JAN 15 '51	60.000	20.000	60.000	20.000	.00	.00	80.000	.00	80.000
JAN 15 '51	60.000	40.000	140.000	60.000	.00	.00	200.000	.00	200.000
JAN 15 '51	60.000	60.000	200.000	60.000	.00	.00	370.000	.00	370.000
JAN 15 '51	60.000	80.000	260.000	60.000	.00	.00	430.000	.00	430.000

2-CONCRETE WORK COST RECORD JOB NO. 53-46									
DATE	NET	CURRENT	TO DATE	DATE	NET	CURRENT	TO DATE	BALANCE	PROOF
JAN 15 '51	90.000	100.000	90.000	100.000	.00	.00	200.000	.00	200.000
JAN 15 '51	90.000	200.000	1,800.000	300.000	.00	.00	1,600.000	.00	1,600.000
JAN 15 '51	1,000.000	100.000	2,800.000	400.000	.00	.00	2,700.000	.00	2,700.000
JAN 15 '51	50.000	100.000	2,800.000	500.000	.00	.00	3,300.000	.00	3,300.000

1-GENERAL CONDITIONS COST RECORD JOB NO. 53-46									
DATE	NET	CURRENT	TO DATE	DATE	NET	CURRENT	TO DATE	BALANCE	PROOF
JAN 15 '51	1,000.000	50.000	1,000.000	50.000	.00	.00	1,500.000	.00	1,500.000
JAN 15 '51	90.000	60.000	1,900.000	1,100.000	.00	.00	3,000.000	.00	3,000.000
JAN 15 '51	1,100.000	30.000	3,000.000	1,400.000	.00	.00	4,400.000	.00	4,400.000
JAN 15 '51	1,300.000	70.000	4,300.000	2,100.000	.00	.00	6,400.000	.00	6,400.000

CONTROL CARD ADAMS HIGH SCHOOL ADDITION COST RECORD JOB NO. 53-46									
DATE	NET	CURRENT	TO DATE	DATE	NET	CURRENT	TO DATE	BALANCE	PROOF
JAN 15 '51	2,100.000	80.000	2,100.000	80.000	.00	.00	2,900.000	.00	2,900.000
JAN 15 '51	2,500.000	1,200.000	4,600.000	3,000.000	.00	.00	6,600.000	.00	6,600.000
JAN 15 '51	3,000.000	1,200.000	7,600.000	3,200.000	.00	.00	10,800.000	.00	10,800.000
JAN 15 '51	2,500.000	1,300.000	10,100.000	4,500.000	.00	.00	14,600.000	.00	14,600.000

holding Tax and Social Security. This makes it very easy indeed to prepare quarterly 941-a and annual W-2 reports; it is simply a matter of copying totals, which is done by machine.

We have an average of about 200 people on the payroll at any one time. The man in charge of the payroll used to spend all day Tuesday, Wednesday and Thursday preparing it, and then spend all day Friday posting to the earnings records. The entire operation now takes less than a day.

General Ledger

Even the General Ledger is now on a machine basis. The General Ledger and General Journal are prepared at the same time, with account balances and journal accumulation being done automatically.

Before installation of the machine system, it was at least the 25th of the following month before financial statements could be placed on Mr. Ursprung's desk. Now they are there by the 9th—and indeed we could have them much earlier than that, except that we do not get all invoices in until the 8th.

Operation of Machine

All of the bookkeeping in our office is done by men. We thought at first—before we got the machine—that it might be necessary to employ a girl operator, but it was proved to us that such was not the case. To my way of thinking, there is no such thing as an "operator" for a National "Class 31" machine; anyone can operate it. The proof of that is in the fact that our men themselves run the machine; in fact, I use it for the General Ledger.

The "31" does most of the work automatically; all the "operator" has to do is enter the figures on a regular adding machine keyboard and the machine takes care of the rest. Typing is done on the machine's standard keyboard electric typewriter. In order to switch from one job to another (for instance, from Cost Records to Payroll), it is only necessary to change the control panel or "form bar" on the front of the machine, and this is accomplished in the twinkling of an eye.

It seems to us that there must be many other general contractors now using a pen-and-ink bookkeeping method who could greatly increase efficiency—and at the same time, profit—by using a system similar to ours. If the story of our machine system is helpful to others, the job of writing it will have been well worth the effort.

SUB - CONTRACT ACCOUNT									
SUB CONTRACTOR				PROJECT		DATE		ORDER NO.	
Sponcer Iron Works Co.				Adams High School Addition		10-1-53		53-16-1	
P. Beaver Street Voorster, Ohio.				Side Street Berea, Ohio.					
DATE		DESCRIPTION		CONTRACT & EXTEND		CREDITS		NET AMOUNT	
10-1-53		Materials and Wages		886,000.00				886,000.00	
10-1-53		Additional Material		1,000.00				1,000.00	
DATE		DESCRIPTION		CONTRACT & EXTEND		CREDITS		NET AMOUNT	
10-1-53		Materials and Wages		886,000.00				886,000.00	
10-1-53		Additional Material		1,000.00				1,000.00	
DATE		DESCRIPTION		CONTRACT & EXTEND		CREDITS		NET AMOUNT	
10-1-53		Materials and Wages		886,000.00				886,000.00	
10-1-53		Additional Material		1,000.00				1,000.00	

PAYROLL JOURNAL									
DATE		DESCRIPTION		CONTRACT & EXTEND		CREDITS		NET AMOUNT	
10-1-53		Materials and Wages		886,000.00				886,000.00	
10-1-53		Additional Material		1,000.00				1,000.00	
DATE		DESCRIPTION		CONTRACT & EXTEND		CREDITS		NET AMOUNT	
10-1-53		Materials and Wages		886,000.00				886,000.00	
10-1-53		Additional Material		1,000.00				1,000.00	

EARNINGS RECORD									
NAME		STREET		CITY		STATE		ZIP	
LEROY JONES		1333 Jones Lane		Cleveland 11, Ohio		OHIO		44115	
NAME		STREET		CITY		STATE		ZIP	
LEROY JONES		1333 Jones Lane		Cleveland 11, Ohio		OHIO		44115	
NAME		STREET		CITY		STATE		ZIP	
LEROY JONES		1333 Jones Lane		Cleveland 11, Ohio		OHIO		44115	

RECORD OF WAGES AND DEDUCTIONS									
NAME		PERIOD		HOURS		EARNINGS		DEDUCTIONS	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	

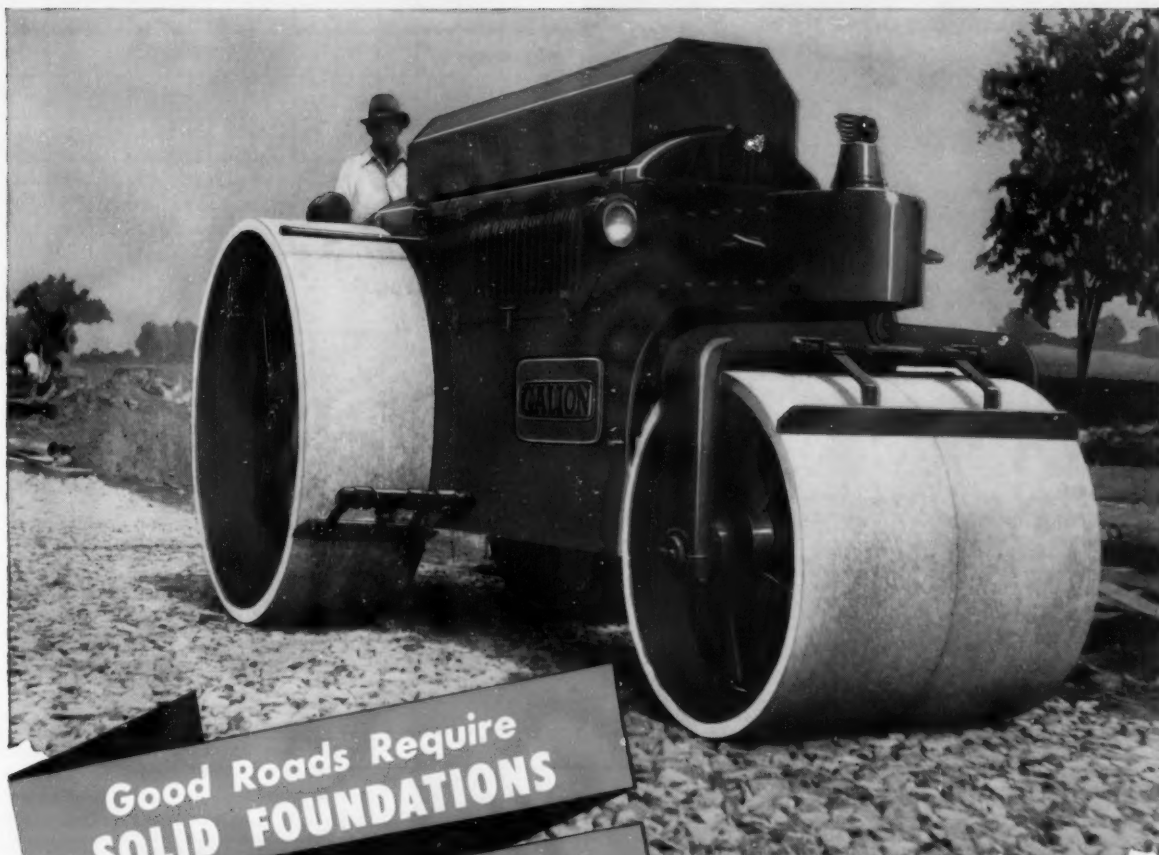
GENERAL LEDGER JOURNAL									
NAME		PERIOD		HOURS		EARNINGS		DEDUCTIONS	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	

GENERAL LEDGER									
NAME		PERIOD		HOURS		EARNINGS		DEDUCTIONS	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	
LEROY JONES		10-1-53		40.00		960.00		15.00	

Top: Sub-contract accounts are kept up-to-date and in absolute proof. Note to-date balances for billings, payments, uncompleted and unpaid balance. If overpayment were made, a red balance would appear immediately in "Uncompleted" column. (These ledgers are posted before checks are mailed out.)

Center: Payroll work now takes less than a day. Pay statement is printed on outside of each employee's pay envelope, and Earnings Record and Payroll Journal are created in same operation. Machine prints to-date balances for Earnings, Withholding Tax and F.I.C.; journal columns accumulate while posting.

Bottom: General Ledger and General Journal are done together by machine. Financial reports can be prepared instantly under this system.



**Good Roads Require
SOLID FOUNDATIONS**

**-- Which Require
GALION 3-WHEEL ROLLERS**

For instance, a GALION 12-15 Ton Ballastable-type "Chief" Roller with rolls filled gives you 510 pounds compression per lineal inch of width on the rear wheels. That's the kind of super compaction experienced contractors and engineers require on sub-bases that must stand up under modern traffic conditions. It's the kind of performance you will find profitable. Write for literature.

5 SIZES

"Warrior"
6, 7, and 8 ton

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All GALION 3-Wheel Rollers are available with spoke or ballastable-type rolls, and gasoline or diesel engines.



---RETURN THIS COUPON TODAY---
THE GALION IRON WORKS & MFG. CO., Dept. CR-54, Galion, Ohio, U.S.A.

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[EDITOR'S NOTE: Mr. MacLeod made the following address before the Construction Industry Safety School, April 10, in Memphis. The school, which was sponsored jointly by the Memphis Chapters of the A.G.C. and the American Institute of Architects and the Memphis Building and Construction Trades Council, heard other guest speakers including the Hon. Frank G. Clement, governor of Tennessee.]

» I DOUBT if any one person is qualified to speak conclusively on Management's Views on Safety. It would seem more fitting for the purposes of this meeting to discuss what we think management's views should be.

I make that statement because there is evidence that management's views on this subject are not always what they should be. We are meeting here to point up certain facts which we hope will assist management to adopt proper views on this subject which is so vital to the economy of the construction industry. I think you might consider my remarks as a testimonial because I am going to draw on my personal observations and on the experience of my own company.

Accidents Costs High

We may find in some small details a variance in the manner in which safety affects individual concerns but basically the impact of poor accident experience is the same on all industry. The humanitarian, social, legal and economic costs are high.

Management may attempt to hide its head from the threat imposed by lack of accident control but it cannot escape the reckoning which will invariably follow.

Our first thought on this subject is that management has a moral obligation on its part to provide every means

Safety School on Tape

The Memphis Chapter announced that tape recordings of the entire proceedings were made and are available to any chapter wishing to borrow them. There are also forty 35 mm. slides, taken on different jobs around the Memphis area, which are available to any chapter wishing to borrow them. The chapter plans to mimeograph the school's sessions, and any chapter wishing information on getting copies should contact W. W. MacLaughlin, secretary-manager.

Management's Views on Safety

By John MacLeod

President, Associated General Contractors of America, Inc.

for the prevention of accidents. Certainly no one in this enlightened age would attempt to deny the fact that working conditions or facilities which permit of excesses in injuries to workers will have a profound effect upon our relationship with our employees and with the community in which we operate. It would be worth our entire effort to control industrial accidents if

for no other reason than the humanitarian factor involved.

Fortunately, no matter what our incentive might be, the humanitarian factor will benefit and the employee and his family will share in the reward. And there are several incentives, which, viewed in their proper light, should leave no choice on the part of any employer but to make every effort

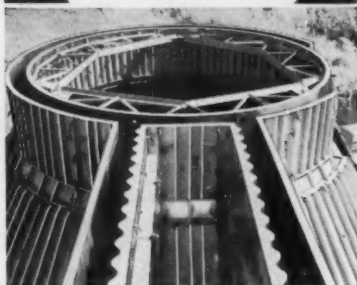


President MacLeod, on left, talks with J. Walter Jones, Jr., center, Wessell Construction Co., president of the Memphis Chapter, and the Honorable Frank G. Clement, governor of Tennessee, who was a guest speaker, during a luncheon meeting of the safety school in the Gayoso Hotel. Memphis' Mayor Frank T. Tobey also addressed the meeting.



Shown attending a breakfast preceding the safety school is President MacLeod, seated second from left, as he talks with some of the officials who sponsored the show. Seated with Mr. MacLeod are John Cassidy, left, of the John Cassidy Construction Co. and national A.G.C. director; J. Walter Jones, second from right, president of the Memphis Chapter; and Harvey Padgett, chairman of the chapter's accident prevention committee and chairman of the school. Standing, left to right, are W. W. MacLaughlin, Jr., secretary-manager of the chapter and John Gorman, president of the Memphis Building and Construction Trades Council. Some 170 contractors, superintendents, foremen, labor and insurance representatives attended the school.

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ACCIDENT PREVENTION

to establish a definite and effective accident prevention program. I am well aware of the stand which The Associated General Contractors of America and the local chapters have taken in this matter and of the fine work which has been done.

I make no pretense here that I shall be able to add to the many volumes which have been written on the subject of safety nor to the utterances of countless speakers over the years. However, I do want to reaffirm the intent of A.G.C. and to sum up, if I may, those incentives which are offered management to sponsor an active and constructive safety program.

In our company we have learned that where employees recognize an interest on our part in their safety and welfare there is a pleasant and gratifying reaction. This reaction does not stop at the employee level. It has a very telling influence on the members of our supervisory force. It creates a wholesome spirit of understanding and cooperation.

In this same phase we know that labor organizations take favorable cognizance of our efforts to provide for the safety and welfare of their members. So we benefit through an improved labor relationship.

Legal Responsibility

I am sure all of us are aware of our legal responsibility in this matter. All of the states now have laws which require employers to pay for injuries suffered by their employees and most states require that employers provide reasonable standards for the safety of their workers. The federal government requires that contractors on government projects provide definite measures to assure employee safety.

In addition to the strictly legal responsibilities we know that a reputation for safety, with all of its implications, is of real value when the contractor is sitting across the table from a prospective client. And the prime reason for this is the economic factor.

We have one yardstick which we use in our company to measure our accident costs. Our insurance is written under the retrospective rating plan which tells us at the end of each policy year just what our insurance has cost us. The frequency and severity rates of industrial accidents govern the amount we pay. It so happens that between the minimum and the maximum of our premiums there is a potential savings in excess of \$200,000. We

are doing everything we can to save that sum!

You know and I know that in these days \$200,000 is the profit on a lot of work. We also know that for every dollar we save on those insurance premiums, which represent direct accident losses, we have saved several dollars on indirect or hidden costs.

Still thinking of the economic factor, we are all aware of the charge for insurance which must be included in a contract bid. If a contractor has had an unfavorable accident experience and as a result is required to pay a penalty on his insurance rates, that difference can and has meant the difference between a successful and unsuccessful bid.

To pursue this line of thought still further we will find that accident prevention with all of the many features involved has a tendency to tone up the efficiency of an operation. Unsafe working conditions and practices not only produce accidents, they disrupt the smooth flow of work. The very attitude of men employed in an orderly and well maintained work area is conducive to higher production. Equipment and material selected and maintained with the safety factor given careful consideration results in better performance. We could go on indefinitely reciting the reasons for and the benefits from a safety program.

In Summary

To sum up briefly, we have these incentives which should leave no one in doubt as to the value of effective safety measures:

- Humanitarian interest in our employees.
- Moral obligation imposed by modern society.
- Legal responsibility.
- Favorable impact on labor relations and public relations.
- Effect of insurance rates and premiums.
- Effect on our standing in the eyes of the prospective client.
- General effect on the economy of our industry.

I sincerely urge you to give this your most serious consideration. And remember that industrial accidents are no respecters of size. Whether you employ ten or a thousand men, uncontrolled accidents will be very costly.

I believe that no one segment of your industrial operations will pay greater dividends with less investment than a good safety program.

Hard Hat Saves Electrician



It's easier to get a new hard hat than a new head, Electrician Foreman C. R. Forrest said after a 75-pound transformer cover fell five feet and struck his helmet.

Mr. Forrest, employed by the Schulman Electric Co., a subcontractor for F. H. McGraw and Co., on the atomic energy facility at Paducah, Ky., suffered only a superficial scratch as his laminated plastic Skullgard absorbed the impact of the heavy cover. Wearing a new hat, the foreman (above) examines damaged crown of the hard hat that saved his life.

Corps Praises A.G.C. Chapters

The Corps of Engineers commended The Associated General Contractors of Missouri and Illinois recently for helping to establish outstanding safety records last year on its projects in the St. Louis district.

District Engineer Col. Fred E. Ressegieu said that "a total of 847,957 hours was worked under some 78 various construction contracts awarded in the area by the Corps of Engineers in 1953. Only two lost-time accidents and no fatalities were recorded."

In letters to the presidents of these A.G.C. chapters Col. Ressegieu said that "The Associated General Contractors of Missouri and Illinois should share in the credit for this substantial improvement in the field of safety."

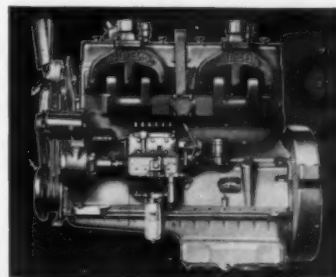


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The power that handled this job so smoothly, and without a hitch, was furnished by Waukesha Model WAKD Diesel engines, powering both the turntables and the carriers. For detailed information on the many advanced design and construction features of this Waukesha Diesel, send for Bulletin 1415.

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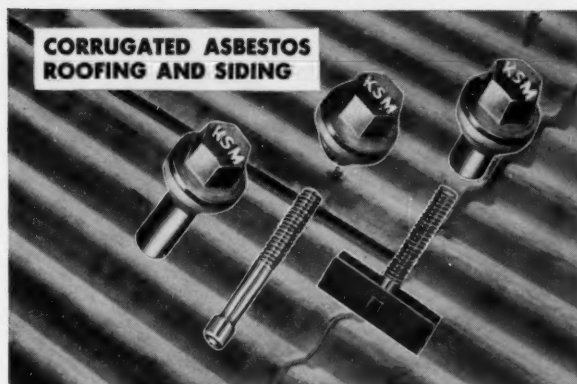
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At least once a week the foremen would inspect rope, top lift cables, load cables, chokers, float lines, fall lines, and the like. As a result, there





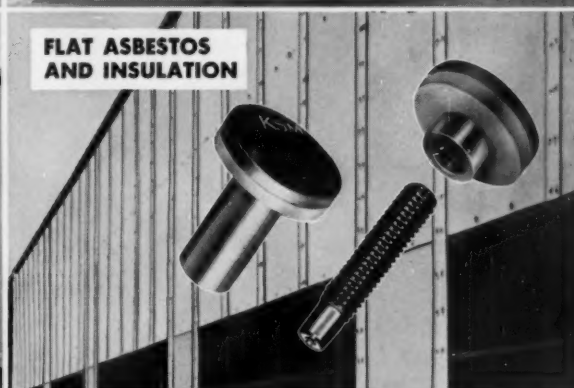
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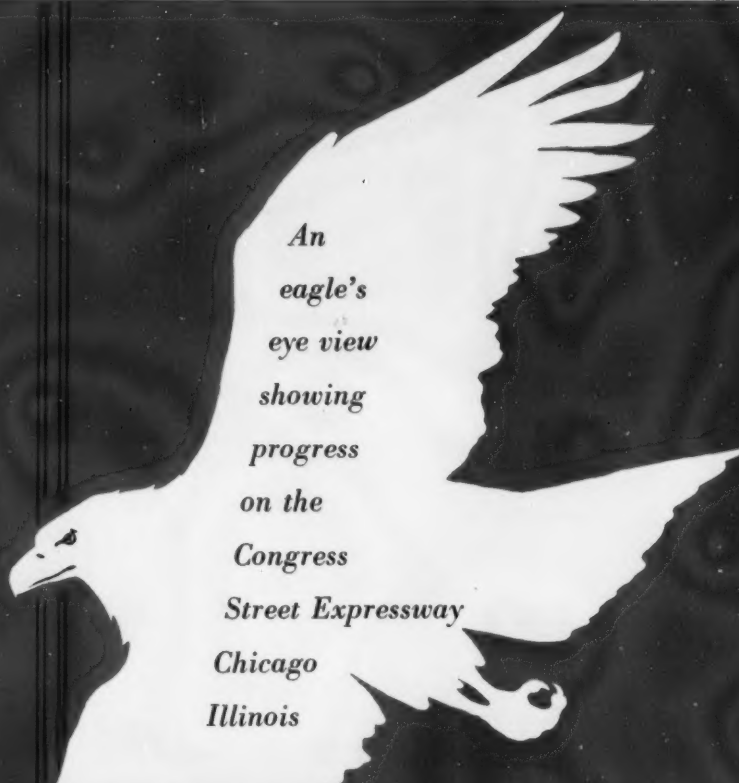
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ACCIDENT PREVENTION

was not one accident on the job due to cable failure.

At one point during the job we were receiving 35-40 carloads of steel daily to be unloaded and stored. We were plagued by a number of "foolish" accidents, such as men standing at the side or end of the car during the unloading and having the load drift on to them. We therefore decided that every time we had a lost-time accident the whole gang would not work the following day. This meant that when a man suffered such an accident, the whole gang suffered too, financially.

Another source of accidents was eliminated when we persuaded some 150 men who were wearing bifocals on the job to leave them at home and get normal glasses for their work. When walking on ironwork it is easy for a man with bifocals to misjudge distances and take a fall.

Blood Bank

Although an organization may build up an effective safety program, serious injuries sometimes happen. When they occur, as was in our case, blood transfusions are often needed. We thought of creating blood banks in one of the hospitals near the job for this purpose, by letting the men volunteer to donate the blood at the hospital on company time.

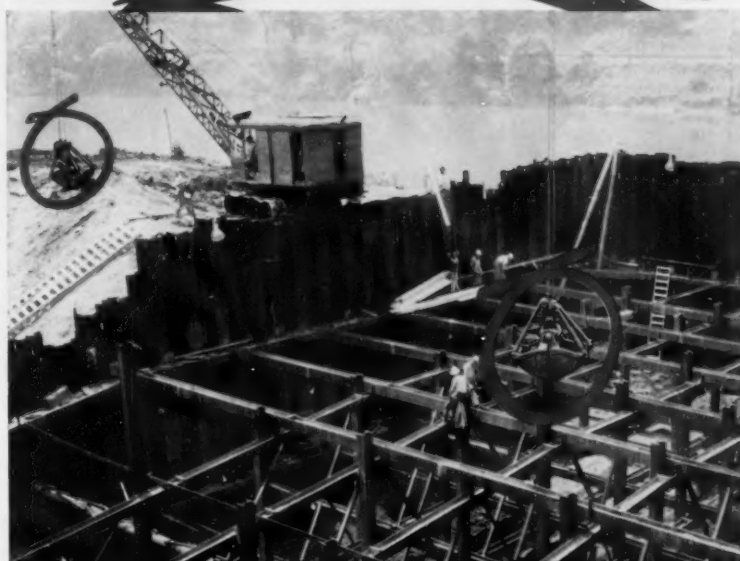
Since we were building an entire steel-producing plant, U. S. Steel Corporation maintained a complete dispensary, including x-ray equipment, two plant physicians and five industrial nurses. This dispensary was open 24 hours a day, seven days a week. The services of the dispensary were available to the 12,000 employees on the payrolls of the 97 general contractors building the plant.

In concluding, I would like to say that our safety program had one added expense. In several cases tool boxes were rifled and shanties broken into. Strangely enough, the only things missing were items of safety equipment such as goggles, skullguards, safety belts, etc. This would indicate that our workmen are no longer wary of safety campaigns.

In any discussion of these safety principles it must be remembered that we are not pointing out the program of one organization, one small contractor, or even one large contractor. We are, however, trying to develop a system that will ensure safe working conditions for all, from the individual in the field to the top-level management in the office.

THE CONSTRUCTOR, MAY 1954

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Firms Win Awards for Safe Records in 1953



Southern California Get Awards . . .

» SHOWN on this page are pictures of A.G.C. members whose firms were presented safety awards at recent

ceremonies held by the local chapters.

These awards, as presented by the national A.G.C. office and its chapters,

are designed to give recognition to contractors who have safe records and who take an active interest in reducing the high rate of construction accidents. Last year the national A.G.C. presented over 350 awards and no lost-time certificates to winning firms.

← **Southern California Chapter** President William E. Irish (center), in picture at left, is shown with W. D. Shaw, left, manager of the chapter, and three members of the chapter who received safety awards.

They are as follows: J. V. Quinn, second from left, whose firm of Quinn and Conant, received a certificate of commendation for no lost-time accidents in 1953; Richard E. Arbogast, second from right, of the Newbery Electric Corporation which won first place for the best 10-year record in the Heavy Division for contractors with less than 2 million man-hours; and J. R. O'Neil, safety supervisor of the Fluor Corporation, Ltd., which took third place in the Heavy Division.

Georgia Branch general contractors who won merit awards for no lost-time accidents are shown at right.

They are: Ira Hardin, Ira H. Hardin Co.; H. W. Beers, Jr., Beers Construction Co.; Merrill W. Newbanks, building contractor; George Ivey, Ivey Brothers Construction Co.; W. M. Wheeler, J. A. Jones Construction Co., all of Atlanta; H. E. Hennigh, Cedar-town building contractor; Robert R. Johnson, Johnson and Johnson Construction Co., Rome; H. D. Humphries, Concrete Builders, Inc., and Joel W. Clayton, Nonnemaker-Clayton Construction Co., both of Atlanta.

Not shown in the picture are J. P. Bradfield, Columbus building contrac-



. . . Along With Georgia Members . . .

tor; George Munn, Munn-McCorkle Co., Atlanta; and representatives of Sheridan-Punaro Co., Macon; and the Swift Construction Co., Columbus.

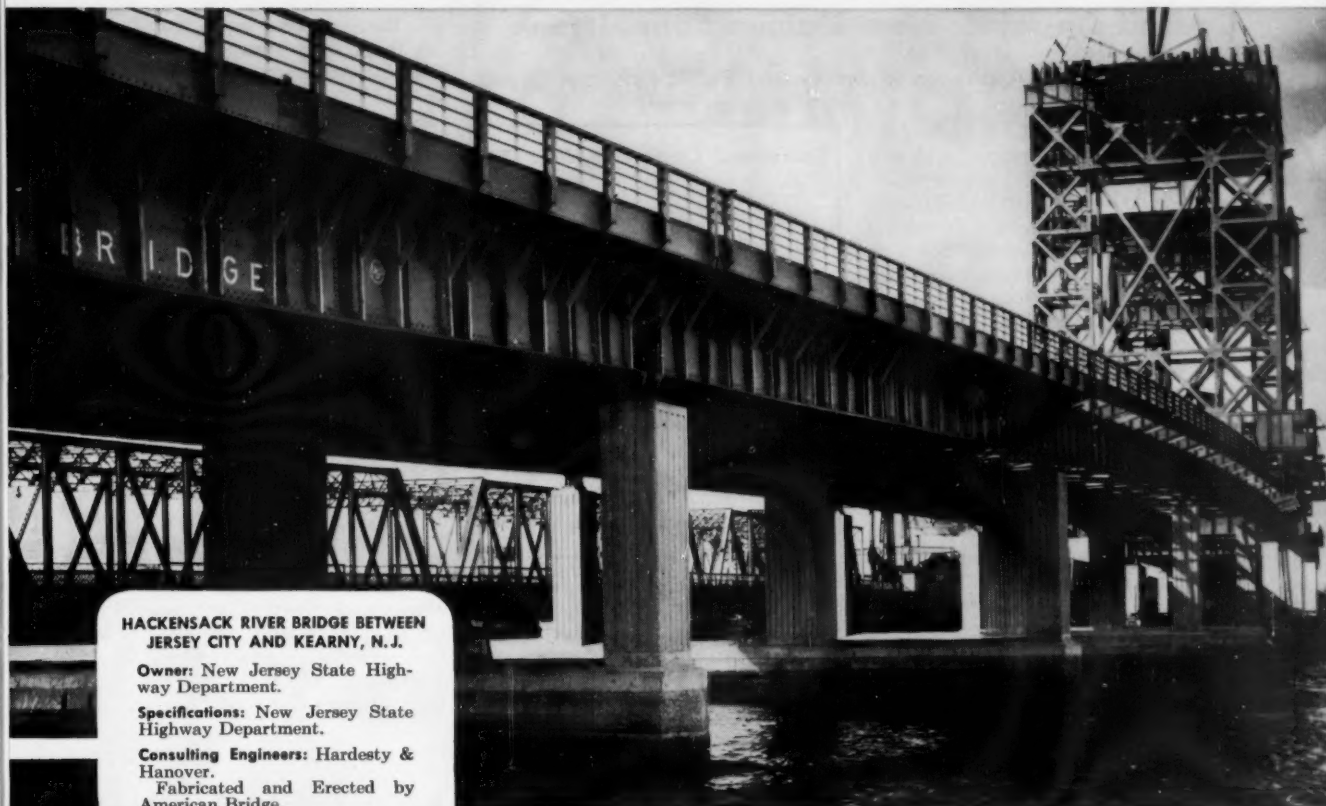
The awards were presented during the Georgia Branch's 26th annual meeting held in the Biltmore Hotel, Atlanta, March 31. (Page 99)



. . . And Minnesota Contractors.

← **A.G.C. of Minnesota** honors its members who had safe jobs last year. Accident Prevention Committee Chairman Allan Cederstrand, right, and Committee Member Lyell Halverson, second from right, are shown in picture at left presenting first-place safety awards to the following winners at the chapter's recent annual safety dinner in St. Paul: left to right, John E. Comb, Fred R. Comb Co., Minneapolis; Thomas Fowler and Joseph Veranth, Fowler-Veranth Construction Co., Duluth; Bernard Asbach, Otto Asbach and Sons, Inc., St. Paul; and Fred DeRuyter, DeRuyter Brothers, Millmar.

AMERICAN BRIDGE spans the Hackensack again!



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SPANNING the Hackensack is getting to be a habit with American Bridge. We've done it twice in less than two years. Completing in 1952 a 5613-ft. structure with a 375 ft. plate girder main span on the N. J. Turnpike near Laurel Hill, N. J.; and this year, building a new bridge over the same river on heavily travelled U. S. Routes 1 and 9 between Jersey City and Kearny for the New Jersey State Highway Department.

Replacing a lighter, narrower bascule bridge, the new wider, higher Hackensack River Bridge is an important contribution to both highway and river traffic in this busy industrialized area. The new bridge increases the channel width and

shortens operating time and traffic delays.

Carrying two 36-foot roadways, a 4-foot center mall, and two 6-foot sidewalks, this 1,480-ft. bridge is dominated by a 222-ft. thru truss lift span that is supported by towers 149' high and 81'4" wide. Seven thousand tons of structural steel were used in the bridge, all of which was fabricated and erected by American Bridge.

These Hackensack bridges are recent examples of American Bridge engineering, fabricating and erecting "know-how." If you would like to know more about the advantages of American Bridge construction, contact our nearest office.

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UNITED STATES STEEL

Council Appoints New Liaison Committees

• Personnel Appointed to Safety and Public Relations Groups

» A. H. HARDING, manager of the Portland (Oreg.) Chapter, and new chairman of the A.G.C.'s Secretaries' and Managers' Council, last month appointed this year's members to serve on the council's liaison committees with the association's Accident Prevention and Public Relations Committees.

J. George Robinson, assistant manager, A.G.C. of Missouri, Jefferson City, was named chairman of the accident prevention liaison group and Earle W. Devalon, managing director, Colorado Contractors Association, Inc., Denver, was named chairman of the public relations liaison committee.

Accident Prevention

In selecting members for the accident prevention liaison committee, Mr. Harding picked one chapter manager from each of the 12 districts.

The new members of the accident prevention group are W. H. Landaas, secretary-manager, Mountain Pacific

Executives' Conference June 7-8

The second annual joint A.G.C. Executives' Conference will be held in Chicago at the La Salle Hotel, June 7-8, it was announced last month.

Initiated by the national staff and the Secretaries' and Managers' Council at the 34th convention in Miami, last year, the joint conference provides an opportunity for the chapter secretaries and members of the national staff to discuss mutual problems of operation and administration without the board meeting or convention atmosphere.

Chapter, Seattle; Edward L. Pine, secretary-manager, Nevada Chapter, Reno; C. O. Faulk, manager, Associated Contractors of New Mexico, Santa Fe; Loy Duddleston, executive secretary, Houston Chapter; Walter

W. Moeller, executive secretary, Master Builders of Iowa, Des Moines; W. M. Holland, executive secretary, Indiana Highway Constructors, Inc., Indianapolis; C. J. Carroll, executive secretary, Michigan Road Builders Association, Lansing; W. W. McLaughlin, Jr., secretary-manager, Memphis Chapter; R. H. Strickland, executive secretary, Georgia Branch, Atlanta; William M. Lees, managing director, New York State Chapter, Inc., Albany; and Burleigh Martin, executive secretary, Associated General Contractors of Maine, Augusta.

Public Relations

Public relations liaison committee members are Alva J. Coats, manager, New Mexico Building Branch, Albuquerque; Vance Newell, secretary-treasurer, Texas Highway Branch, Austin; Sam Guess, secretary-treasurer, Spokane Chapter; Paul H. Hinds, executive manager, South Florida Chapter, Miami; William J. Sheahan, executive secretary, Rhode Island, Providence; and H. M. Stanton, secretary, Chicago Builders' Chapter.

San Francisco Chapters Get New Managers

• Joint Labor Relations Office Abolished in Recent Shakeup



Bruce McKenzie, left, new managing director of Central California Chapter confers with Robert Mitsch, new manager of the Northern California Chapter.

» THE Northern and Central California Chapters of the A.G.C. made some administrative changes recently by bringing in new managers and abolishing their joint labor relations office.

They still maintain offices at 850 Battery Street, San Francisco, and will each handle their labor relations through separate committees with the managers acting as advisors.

On Feb. 1, J. Robert Mitsch replaced Winfield H. Arata as manager of the Northern California Chapter and Bruce McKenzie succeeded Robert W. Titherington as managing director of the Central California Chapter.

Mr. Mitsch had directed since last May the joint labor relations office until it was closed on Feb. 1. He joined the A.G.C. chapter in June 1952 as assistant labor relations director. Prior to this, Mr. Mitsch spent more than 10 years in labor relations work for government, and building maintenance and the motion picture industries.

Mr. McKenzie, in replacing the interim Managing Director Titherington, brings to his chapter a background in labor relations. He studied at the University of Michigan and Columbia and Cornell Universities and graduated with a degree in industrial rela-

tions and business management. He was on the negotiating staff of the broadcasting industry for two years and was also Pacific Northwest personnel and industrial relations manager for Owl-Rexall.

He also represented some West Coast industries on the old Wage Stabilization Board and later became managing director for the Food Industries of Northern California.

Mr. Mitsch spent three years in the Navy during World War II and conducted various manpower utilization surveys on construction jobs at Farragut, Ida.; Corpus Christi, Tex.; Central and South America and the Caribbean area. After the war he spent three years handling labor problems in Hawaii, and then became assistant industrial relations director on the atomic energy project at Paducah, Ky.

E. O. Johnson, 54, Dies

E. O. Johnson, 54, of Johnson Brothers Construction Co., A.G.C., Salina, Kans., who was recently appointed to the A.G.C. national Advisory Board, died March 29, following a short illness.

Mr. Johnson had been active in chapter and national A.G.C. affairs, serving as president of the Kansas Chapter, Builders Division in 1949 and a member of the Market Development Committee from 1951-53. He also was a national director from Kansas during the same period.

He is survived by his wife and three sons; his brother Ted, with whom he was a partner in the firm; and another brother Vern, who is manager of the Spokane office of Busboom and Rauh, also A.G.C. members.

Michigan Labor Relations

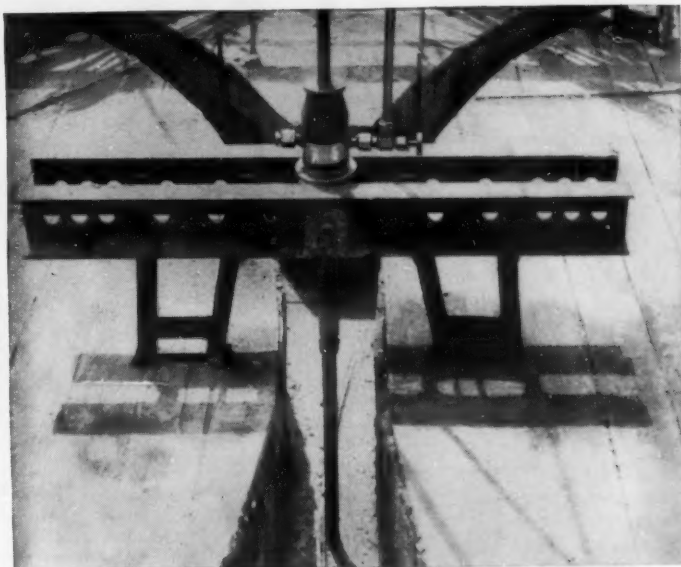
The Michigan Chapter, A.G.C., has launched a new labor relations program which is being directed by Hal Bell, a former F.B.I. agent in Lansing.

Chapter Secretary-Manager George W. Combs, in announcing the new service, said that it will provide a clearing house on labor information and will promote A.G.C. objectives by developing better contacts between general contractors and subcontractors.

Mr. Bell will handle labor relations problems affecting general contractors and subcontractors in the local bargaining areas.

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CHAPTERS • BRANCHES

Colorado Contractors Meet, Elect Officers

• A. S. Horner, Past A.G.C. President, Elected Chapter Director



» AT a recent meeting of the Colorado Contractors Association, Inc., new officers were elected and installed.

Above, they are as follows: left to right, James B. Kenney, Jr., James B. Kenney, Inc., Denver, secretary-treasurer; Jack Harrison, the Harrison Construction Co., Denver, first vice president; Walter Schmidt, Schmidt Construction Co., Grand Junction,

president; and Edwin W. Vandervort, Northwestern Engineering Co., Denver, second vice president.

Directors installed at the same time were Dan G. Bell, former A.G.C. President A. S. Horner, C. L. Hubner, Stanley L. Larson, and Hoyle Lowdermilk, all of Denver; and J. H. Monaghan, Derby; and Henry Shore, Littleton.

364th Engineer Group Trains at Ft. Belvoir



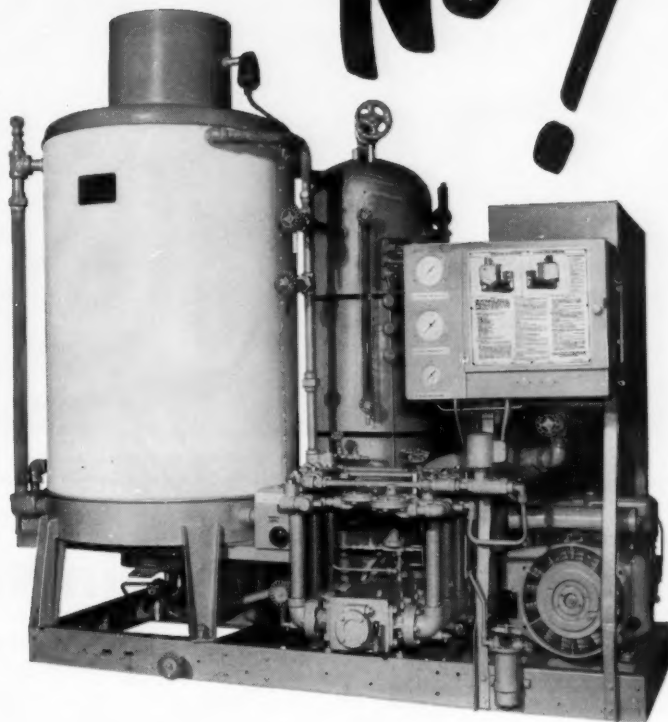
The 364th Engineer Construction Group, an Army affiliated unit sponsored by the Kentucky Highway Division, held recent training maneuvers at the Engineer Center, Ft. Belvoir, Va. Shown with Col. Herman A. Erhart (seated), Erhart-Knopf Construction Co., A.G.C., Louisville, are the following officers of the 364th: left to right—Warrant Officer Carl Strobel; Lt. Col. Daniel M. House, executive officer; Maj. Philip E. Phaneuf, staff plans and training officer; Maj. Alton H. Quilman, staff supply officer; Capt. James T. Daily, headquarters company commander; Maj. John H. Bickel, Jr., staff personnel officer; and Lt. Wilbur Graff.

McKiernan-Clayton

STEAM GENERATOR

**Reduces Pile Hammer
Operating Costs from
Coast to Coast!**

New!



The new McKiernan-Clayton Steam Generator, built expressly to generate steam for pile hammers, is proving its worth across the country. Mounted on the tail of a Diesel crane, on a trailer, or on skids, the unit contributes to building a compact and economical pile-driving rig.

How the *McKiernan-Clayton* Steam Generator saves pile-driving dollars!

- *Inexpensive to mount:* no larger than a medium-sized air compressor.
- *Inexpensive to lift, tow or carry:* light in weight and completely self-contained on its steel base frame.
- *Inexpensive to operate:* quickly started, full-pressure steam in 3 minutes, fuel burned only for steam required by pile hammer.
- *Inexpensive to fire:* high efficien-

cy, forced recirculation water system and continuous coil assure high heat transfer, giving greatest value for each fuel dollar spent.

- *Inexpensive to maintain:* high-strength steel construction, no side-wall refractory brick, packless pump, shock resistant.

For additional information write for Bulletin 63.

The McKiernan-Clayton Steam Generator is built expressly for McKiernan-Terry Corporation by the Clayton Manufacturing Company.

McKIERNAN-TERRY CORPORATION

18 PARK ROW, NEW YORK 38, NEW YORK

Manufacturers of Pile Hammers and Extractors, Coal and Ore Unloaders and Bridges, Grab Buckets and Special Machinery.

MK355



Aerial view of Eastern Air Lines' base at Miami International Airport. Maintenance building in foreground designed by Leslie B. Taylor, consulting structural engineer, of Miami. Construction supervised by J. Herbert Shartle, Eastern Air Lines engineer. Steelwork fabricated and erected by Bethlehem Steel Company.

World's Largest Maintenance Hangar

This mammoth building, dwarfing the planes on its concrete ramp, is Eastern Air Lines' new \$5,000,000 maintenance hangar, largest and most modern of its kind in the world.

Built in the shape of a T, the three-story structure stretches nearly a quarter of a mile from end to end. The stem of the T provides fourteen work ports, seven on each side, while the huge hangar crossing the T accommodates two Super-Constellations. In addition, the 448,748 square feet of floor space contains maintenance offices, overhaul shops, stockrooms and a large, one-story warehouse.

The sturdy framework of this remarkable building consists of 3082 tons of structural steel, fabricated and erected by Bethlehem Steel Company. Erecting an average of almost 100 pieces of steel every day, Bethlehem completed the job in just 70 working days.

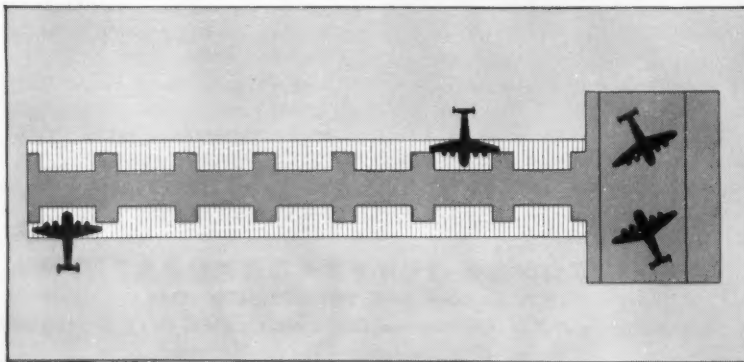
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

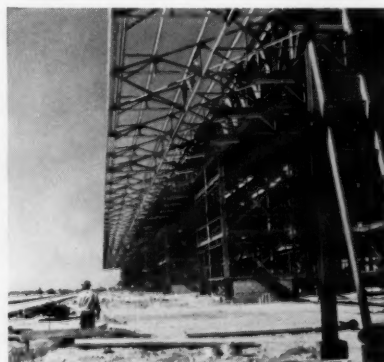
BETHLEHEM STEEL



Plan view of ground floor. Thin lines indicate overhanging roof supported by cantilevered trusses.



View of steelwork for 1219-foot-long hangar.



Georgia Branch Meets

The Georgia Branch, A.G.C., held its 26th annual meeting March 31, in the Atlanta Biltmore Hotel, with members throughout the state attending.

During the afternoon session, presided over by President H. D. Humphries, Concrete Builders, Inc., Atlanta, committee chairmen and Executive Secretary Robert H. Strickland made reports to the meeting.

W. A. Snow, manager, Building Division, national A.G.C. spoke on the national construction picture and predicted that 1954 would be a good year for the industry.

Ira H. Hardin, chairman of the Accident Prevention Committee, presented awards to members with safe records last year. (See page 92.)

The annual dinner that followed was attended by 126 members and guests from among architects, engineers, and city, county and state government officials.

New chapter officers are due to be elected next month.

Mich. Road Builders Hold Annual Meeting



» THE Michigan Road Builders' Association, A.G.C., held its annual meeting April 7, at the Hotel Statler in Detroit, with some 1250 members and guests attending. Shown above are the chapter's staff and new officers, installed during the meeting: left to right—C. J. Carroll, Lansing, executive secretary; A. M. Della-Moretta,

Alpine Construction Co., St. Ignace, Upper Peninsula vice president; Harold J. Taber, Taber-Carmody Co., Grand Rapids, president; Manley Osgood, Ann Arbor Construction Co., Ann Arbor, vice president; Glenn A. Comstock, Comstock Construction Co., Bay City, secretary-treasurer; and Robert F. Browning, staff assistant.



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NATIONAL SURETY
CORPORATION
NEW YORK

one of America's foremost
surety companies



This symbol on your bond or policy guarantees satisfaction

West Texas Chapter Elects 1954 Officers



Newly-elected President J. L. Hair, right, of Wichita Falls, is shown talking with C. E. Fulgham, center, chairman of the Texas State Industrial Commission, and Burt L. Knowles, manager, legislative service, national A.G.C., guest speakers at the chapter's annual second meeting.

» J. L. HAIR, a building contractor from Wichita Falls, was elected the new president of the West Texas Chapter, A.G.C., at the group's annual meeting in Abilene, March 23. Mr. Hair is owner of the firm which

bears his name and is the chapter's third president since it was chartered in March, 1952.

Max Tidmore, Tidmore Construction Co., Lubbock, was elected vice president; and Ed Balfanz, Balfanz Construction Co., Abilene, was re-elected secretary-treasurer along with Hugh H. Welsh, Abilene, executive secretary.

70 Contractors Attend

The meeting, attended by some 70 West Texas contractors, passed a resolution endorsing a hospital contract which was recently let by the state board for hospitals and special schools. The board had been criticized for the way it had handled the contract, which was bid on by one of the members.

Guest speakers at a dinner meeting included C. E. Fulgham, chairman of the Texas State Industrial Commission, who spoke on Communist influence in Texas labor unions; and Burt L. Knowles, manager, legislative service, national A.G.C., who reported the status of national legislation affecting construction.

WILL YOUR NEXT BID INCLUDE THE "FINAL FACTOR"?

Many times a low bond rate can be the *final factor* that tilts a bid in your direction.

How can you make sure of this *final factor* in your bids? Ask your Indemnity Agent to establish your credit line with Indemnity Insurance Company of North America. This large independent company

offers the lowest bond rates* to contractors of *skill, integrity and responsibility*.

You save money on these low rates. An established credit line assures you of getting bonds on future jobs without delay. See your Indemnity Agent now.

*Sorry, Indemnity's low rates are not available in Louisiana and Texas.

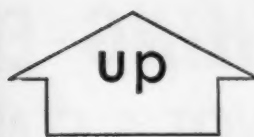
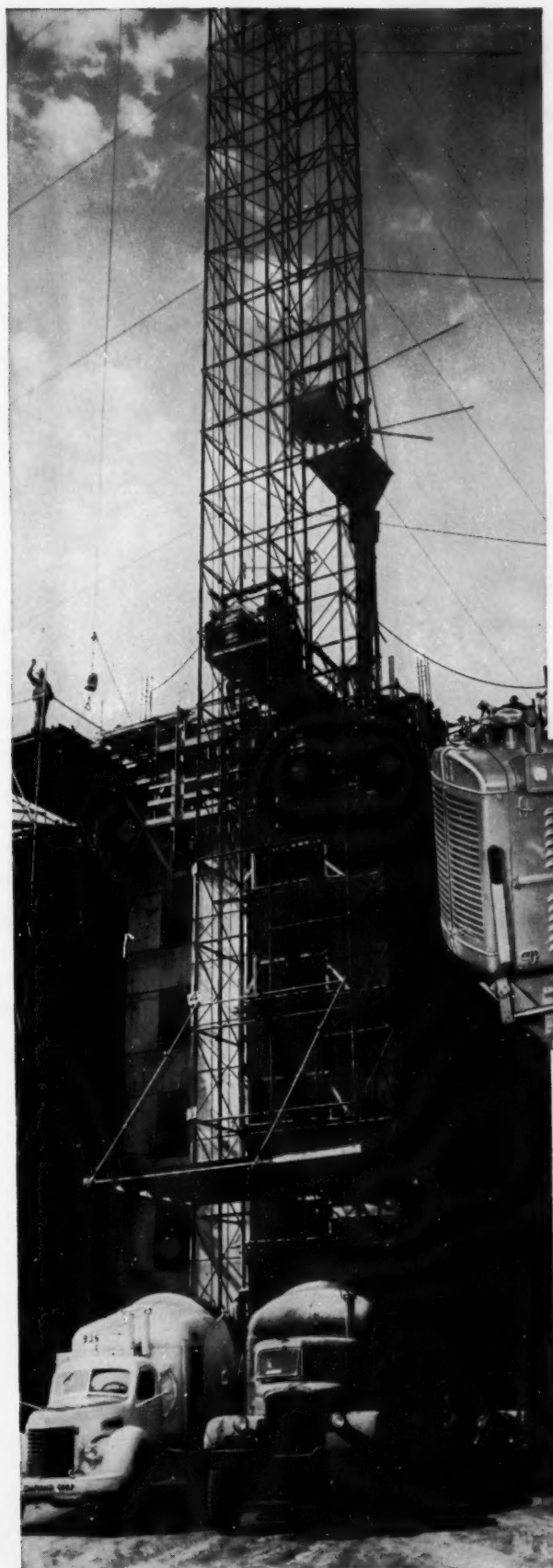
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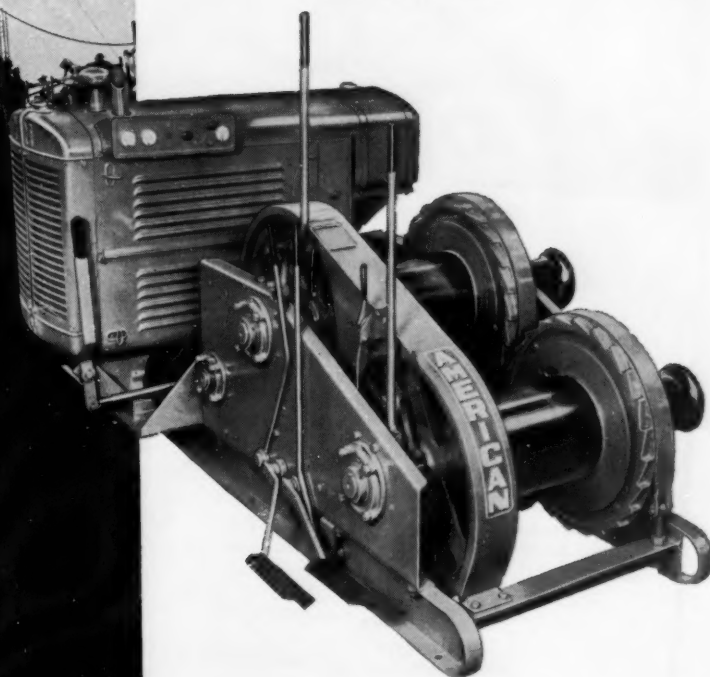
faster, smoother, safer

Full capacity loads, load after load, move up and down quickly, smoothly with an American Hoist on the job! Equipped with anti-friction bearings throughout, American Hoists deliver maximum output with minimum maintenance!

Ask your distributor for details on the complete American Hoist line, *the line that leads the field!*

American Hoist

American Hoist & Derrick Co.
St. Paul 1, Minnesota



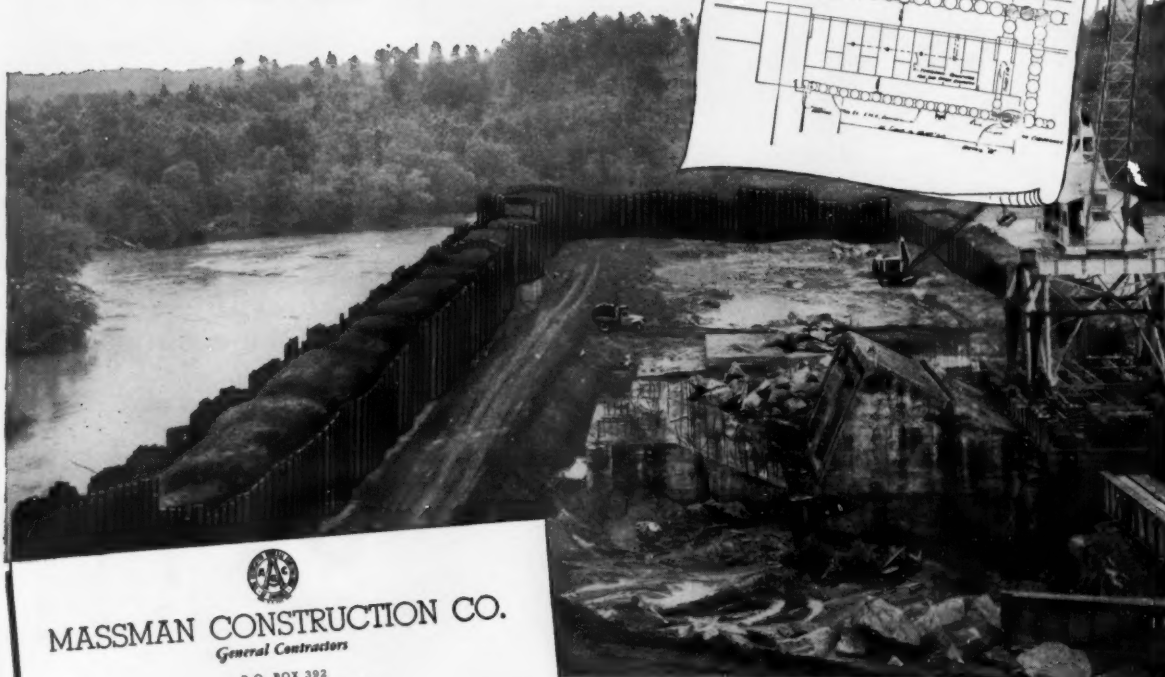
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Cranes • Hoists • Portable Material Elevators
• Genuine Crosby Clips • Revolver
Cranes • Utility Hoists

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...and NOT A CENT OF WASTE

Because it was RENTED!
to the exact job requirements



MASSMAN CONSTRUCTION CO.

General Contractors

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MILLEDGEVILLE, GEORGIA

To: L. B. Foster Company

Gentlemen:

We had to divert the Oconee River for a spillway section for the Georgia Power Company's new dam and powerhouse. One of our biggest helps was to be able to get -- in a hurry and at no great capital outlay on our part -- ALL THE STEEL SHEET PILING the job required - by renting from Foster. May we say it was a pleasure to be serviced by you.

Very truly yours,

Massman Construction Co.

Wm. Sappenheimer
By: Wm. Sappenheimer
Proj. Mgr.



Let us quote you on our low-cost piling rentals—prompt service from 5 Foster warehouses. Send for free piling catalog illustrating diagrams of all standard-made sections.

Request Catalog CP-5

Interesting Statistics on U-Shaped Cofferdam

Upstream: 800 ft. long, 21 cells, each 30.5 ft. diam. spaced on 36.15 ft. centers. Downstream: 550 ft. long, 20 cells, each 20.38 ft. diam. spaced on 26.47 ft. centers. Distance between two rows of cells—200 ft. Bed of river at elevation 256—Upstream piling driven to 281, downstream to 270. Project will contain 180,000 cu. yards of concrete and 500,000 cu. yards earth fill.

Here was a "big job"—where the contractor prided his "no waste" efficiency. The logical expedient—was to RENT the many and varied sections of piling, no need to use "substitute" lengths—he got the exact requirements for the job, almost on a moment's notice—from FOSTER RENTAL STOCKS.

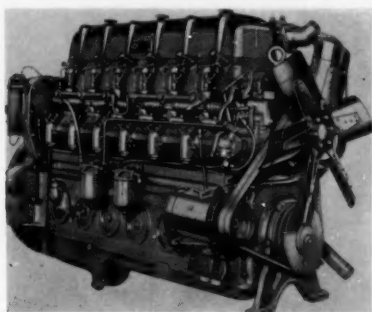
RAILS—TRACK EQUIPMENT • PIPE

L.B. FOSTER co.

PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4 • HOUSTON 2 • LOS ANGELES 5

THE CONSTRUCTOR, MAY 1954

Diesel Engines—Harnischfeger Corp., Diesel Engine Division, Crystal Lake, Ill. New line of 2-cycle diesel engines feature 36% greater power output than old line. They have greater simplicity of design and construction. Operating speed has been increased to 1,800 r.p.m. Compression ratio of all models is 16 to 1 and bore and stroke are 4.5" x 5.5". Engines feature improved cylinder assembly, increased cooling capacity, new design of combustion chamber, improved camshaft design for better timing, easier starting and more r.p.m., injectors with special tips which provide soft spray pattern with single hole, new exhaust manifold. H.p. ratings for new models at 1,800 r.p.m. range from 58 to 255. Displacement is 87 cu. in. per cylinder.



P&H Model 687C-18 6-cylinder fan to flywheel diesel engine

Tractors—Caterpillar Tractor Co., Peoria 8, Ill. Two-section pump guard for front-mounted No. 41 hydraulic control used on D2 tractor gives front and top protection to pump housing, preventing trash from packing between housing and radiator. . . Five-roller track roller frames are now available for oscillating D4 crawler tractors. They are 10" longer than standard 4-roller frames and are available as optional equipment. They require 34-section track assembly instead of standard 31-section track. When large idlers are used, 35-section track assembly is required. . . Increase of h.p. in D7 track-type tractor is announced. Engine brake h.p. at sea level has been increased from 98 to 108 at 1,000 r.p.m. Tractor drawbar h.p. is increased from 81 to 90. Tractor will now develop drawbar pull of 22,750 lbs. Calculated value for maximum drawbar pull when engine is lugged down by overload is 25,250 lbs.

Airplane—Aero Design & Engineering Co., Box 118, Bethany, Okla. New heating and ventilating system has been installed in Aero Commander. Better heating is brought about by mounting of Janitrol S-25 combustion heater in nose. It gives more even distribution of heated air throughout cabin. Better windshield defrosting is obtained with increased circulation of heated air upward from behind instrument panel. New heat vents are individually controllable as to volume and direction and are located near each seat. New fresh air ventilating system takes in fresh air through air scoop located above each pilot's window. Fresh air is carried by duct along top of cabin on each side to eyeball-type vents at each seat location. In addition, other vents are located in lower forward cabin wall. They are all individually controllable.

Plaster Groover—Wodack Electric Tool Corp., 4629 W. Huron St., Chicago 44. New electric tool makes parallel cuts in plaster, after which plaster is taken out with chisel, leaving clean-cut groove. Cutting is done by 2 4" abrasive wheels, which can be set to cut grooves of different widths up to 1 1/4". Depth of cut is regulated by adjustment of wheel guard. Groover can make single cuts in plaster for openings for doors and windows and for repairing cracks. It can be used for scoring tile, marble, stone, concrete and other hard materials. Groover has handle at back containing trigger switch and side handle on wheel guard at left. Bearings are of ball and roller type. Lubrication is sealed and needs to be changed only several times in year. Gears are precision-cut and heat-treated. Wheel guards can be adjusted to take up wear on cutting wheels.



Wodack plaster groover

Electric Plant—Kohler Co., Kohler, Wis. New 5,000-watt AC air-cooled light-weight electric plant, Model 5RM61, is powered by Kohler K660 engine—2-cylinder opposed, 4-cycle air-cooled engine—and is available in 115-volt or 115/230-volt single-phase AC models. Either manual or remote control starting is available. Cooling of engine is accomplished by large capacity blower and housing with baffles. This directs cooling air around finned cylinder and head areas, maintaining correct temperatures under all operating conditions. Plant is equipped with muffler, oil bath air cleaner and oil pressure gauge. Optional accessories include radio shielding, oil filter, vibro dampers, gas valve and carburetor for combination gas-gasoline operation, 55-gal. fuel tank and fittings and 2 6-volt starting batteries for remote starting models. Dimensions of unit are 23 1/4" wide by 28 11/16" high by 32 5/8" long. It weighs approximately 480 lbs.



Kohler electric plant

Scrapers—Wooldridge Manufacturing Co., Sunnyvale, Calif. Two open-bowl "Terra Cobra" self-propelled scrapers are Model TH-090B with heaped capacity of 15 cu. yds., struck capacity of 12.2 cu. yds., powered by Cummins diesel engine of 180 h.p., and Model TH-090 with heaped capacity of 13.5 cu. yds., struck capacity of 10.2 cu. yds., powered by 165 h.p. Cummins diesel engine. They have new open-bowl design, positive hydraulic steering, air-actuated direct-connected power control unit, "boiling bowl" loading system, positive "roll-out" ejector, and 11" base diameter vertical oscillating king pin coupling between scraper and tractor units.



Digs Tank Bed in Hard Rock

IN DALLAS, TEXAS, a formation of hard white rock was encountered on the site of a 2,000,000 gallon prestressed concrete water tank, one of the largest of this type in the U.S. The rock bed was so hard it posed a real excavation problem for Whittle Construction Co.

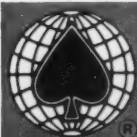
Whittle whipped the problem by using a CLEVELAND Model 140 Trencher to cut closely spaced shallow trenches across the rock formation. This excavated a considerable volume of rock and enabled the dragline bucket to bite into the weakened ridges of rock between the trenches. As each layer of rock was cleared away the CLEVELAND dug the next level and prepared



it for haul out by the dragline.

This job is only one of hundreds of unusual applications that have proved time and again over 30 years the outstanding toughness and versatility of CLEVELANDS—and their ability to dig *more trench in more places at less cost* for you.

Get the Full Story on **CLEVELANDS** from Your Local Distributor



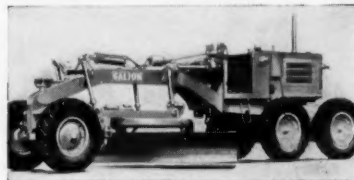
THE CLEVELAND TRENCHER CO.

"Pioneer of the Modern Trencher"

20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

NEW EQUIPMENT • MATERIALS

Grader—The Galion Iron Works & Mfg. Co., Galion, Ohio. Model 450 all-gear tandem-drive motor grader weighs 20,630 lbs. without scarifier. It has 75 h.p. International Harvester diesel engine and new constant-mesh transmission with 6 overlapping forward speeds ranging from 1.1 to 20.1 m.p.h., and 2 reverse speeds of 1.3 to 8.4 m.p.h. It has positive all-gear 4-wheel drive. Gears have 3" faces and are made of heat-treated nickel alloy steel drop forgings. Two-piece rear axle is full-floating design having driving function only and carrying none of grader weight. Large low-pressure tires, size 13:00 x 24, are standard equipment. Hand steering with hydraulic booster is also standard equipment. All blading and scarifying operations are under full hydraulic control. Grader has 360° circle reverse and 90° bank-cutting angle. Blade pressure is from 10,950 lbs. up to 13,150 lbs., depending on extra equipment. With standard 12' blade, reach outside rear tires is 72". Available as extra equipment is 12' hydraulic shiftable moldboard which permits maximum extension of blade 97" beyond rear tires.



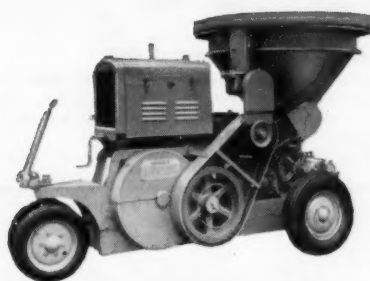
Galion Model 450 motor grader

Braking Device—Allison Division, General Motors Corp., Indianapolis 4. "Torqmatic" brake provides positive control over down-hill speed of heavy-duty, off-highway trucks without wear on conventional friction brakes. Brake consists of 3 major parts: rotor assembled as integral part of converter output shaft, stator vanes cast into housing which encloses rotor and control valve. As truck moves down-hill, operator opens control valve which admits oil to brake. Paddles of rotor churn oil against stator vanes, thus placing drag on converter-transmission drive shaft. If more braking is required, more oil is admitted to brake. Pumping action of rotor circulates oil to heat exchanger where heat is dissipated. Source of oil supply is lubricating system for converter and transmission, and after cooling, oil is returned to oil reservoir for re-use.

Baltimore Ball Park Capacity Increased



"Pumpcrete only possible economical way"



Increasing seating capacity in Baltimore Memorial Stadium by more than 60% was a big job calling for the placing of 9,000 yards of concrete in forms and decking. Big job, yes, but placement costs were kept low by using two 160 Pumpcretes®...the only possible way to do the job economically, according to the contractor.

with Pumpcrete...it's 1, 2, 3

...1, pump it; 2, pipe it; 3, place it. Pumpcrete delivers concrete right to the forms all in one operation. No bugging, no expensive preparatory costs. No trestling, scaffolding or towers required. You reduce "dead time." There's no interference with other crews—carpenters, plumbers, electricians, etc.

Eliminate non-productive moving time and reduce direct labor cost on your next job—do it with Pumpcrete. See your local Rex Distributor, or write Chain Belt Company, 4625 West Greenfield Avenue, Milwaukee 1, Wisconsin.



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STANDARD FORMS

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Prepared by The Associated General Contractors of America and Cooperating Bodies

Order No.	MANUALS	Per Copy	Per Dozen	Per 100
1.	A.G.C. Manual (Contains documents listed below: Nos. 3-30, inclusive, and Nos. 34, 35, 36, 36a, 37, 38).	\$5.00	\$50.00	-----
2.	Accident Prevention Manual (Revised and enlarged 1952) (Pocket-sized sectional reprints available. Information on request.)	3.00	30.00	\$210.00
CONTRACTS				
3.	Suggested Form of Contract, Engineering Construction Projects, prepared by A.S.C.E. and A.G.C., 1953 edition.	.25	2.75	20.00
4.	Standard Building Contract of the American Institute of Architects—Revised 6th Edition	.50		47.50
5.	Subcontract form—American Institute of Architects—Revised 6th Edition	.10		9.50
6.	Standard Form of Acceptance of Subcontractor's Proposal	.10		9.50
7.	Standard Government Contract	.01		
8.	A.G.C. Cost Plus a Fee Contract	.10	.50	2.50
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20.	Contractors' Equipment Ownership Expense (Itemized tables of ownership expense elements with instructions for application. Revised 1949)	1.00	10.00	65.00
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24.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover. Engineering Construction (For Qualifying Before Bidding)	.20	1.80	12.00

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MISCELLANEOUS				
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36.	Concrete Mixer Standards	Single copies—no charge; quantity prices on application.		
36a.	Contractors' Pump Standards			
37.	A.I.A. Standard Form of Arbitration Procedure			
38.	Suggested Guide to Bidding Procedure			

FOR A.G.C. MEMBERS ONLY



A.G.C. EMBLEM

List of Styles and Prices on request.

SIGNS AND SEALS

39.	A.G.C. Cardboard Seal (red and black) 24" dia.	.50
40.	A.G.C. Metal Seal (red and black) 10" dia.	.40
41.	A.G.C. Decalcomania Seal (red and black) a. 10" dia.	.20
	b. 5" dia.	.10
Metal Seals and Decals: 20% discount for orders of more than 50; 40% discount for orders of 200 or more.		

43. A.G.C. SOCIAL SECURITY FORMS

Form SS1: Application for Employment; Form SS2: Employees' History Record; Form SS3: Employees' Employment and Earnings; Form SS4: Payroll. List of prices and styles will be furnished to A.G.C. members on request.

USE THE CONVENIENT COUPON TO PLACE YOUR ORDER

Order No.	Amount	Cost	11.	12.	13.	14.	15.	16.	17.	20.	21.	22.	24.	25.	26.	27.	28.	29.	30.	34.	35.	36.	36a.	37.	38.	39.	40.	41a.	41b.	43. Price List and Samples	Price List and Styles of Emblem	TOTAL COST
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Make Checks payable to **CONSTRUCTION FOUNDATION, A.G.C., Munsey Building, Washington 4, D. C.**

Gentlemen: Enclosed find check for \$_____ for which please send materials as ordered by number herewith.

Name _____ Address _____

City _____ Zone _____ State _____

May 1954

Bituminous Mixer—Iowa Manufacturing Co., Cedar Rapids, Iowa. "Cedarapids" Model CM self-contained portable twin-shaft continuous-flow bituminous mixing unit has capacities up to 40 tons per hour, depending on type of mix, specified mixing time and capacity of drying and feeding time. It is designed for such jobs as patching, surfacing parking lots, driveways, alleys, school yards, tennis courts, etc. In operation illustrated, material is fed into "Cedarapids" 3612 drier from 2-compartment hopper equipped with reciprocating feeder. Adjustable bin gates proportion aggregate according to specifications. Independent enclosed bucket elevator delivers multiple hot mix aggregate to twin-shaft continuous-type mixer where it is mixed to specifications with continuous flow of bitumen from weight calibrated metering pump on mixing unit. Bucket elevator can also be arranged for cold-mix applications or to use weight calibrated apron feeder on mixing unit for single aggregate hot mix.



"Cedarapids" Model CM mixer

Shovel-Crane—Schield Bantam Co., Waverly, Iowa. Model C-35 line of crawler-mounted cranes, backhoes, draglines, shovels, clamshells, pile drivers and magnet cranes have $\frac{3}{8}$ -yd. 5-ton rated capacity. They have 2-speed independent travel, enabling op-



MAKE IT BUDGE

WITH A MAN-SIZED

Nudge

Whether you're trying to budge heavy dirt in Illinois, snow in New England or shale in the Carolinas, you can depend on SHUNK blades.

They're rolled from top-quality steel to our own specifications; economical; designed to take heavy punishment.

For almost a century the name SHUNK has been a byword in all parts of the world to everyone concerned with maintenance and construction blades . . . original equipment manufacturers, contractors, distributors. Let us show you why . . . specify a SHUNK blade for your job.

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SCRAPPER BLADES



GRADER BLADES



SNOW PLOW BLADES
BULLDOZER BLADES



Shunk MANUFACTURING COMPANY
In Our 99th Year

BEST BLADES MADE

BUCYRUS, OHIO

erator to work front-end attachment while traveling and swinging machine. Undercarriage has heavy-duty main frame and deep, rigid side rails. They have 6 track rollers. Drive power through chain and jaw clutches is used for each track. Machine equipped with 16" pads has over-all width of 94" and ground-bearing pressure of 5 lbs. per sq. in. Power boom hoist gives power lowering as well as raising.

Stud Welding—KSM Products, Inc., 311 Woodland Ave., Merchantville, N. J. "Korr-Studs" for fastening corrugated asbestos, steel, aluminum, flat asbestos and insulation are applied from top side of roof or outside of wall. Studs are not visible from inside. They are designed to become integral part of steel structure. Tightly sealed holes prevent deterioration from leakage. Studs are designed to allow maximum loading of fastener, while allowing wide safety factor. Threads, where required, are rolled to provide additional strength. Solid flux on each stud is precision-centered to

assure good weld. Side-lap fasteners are quickly applied from outside.

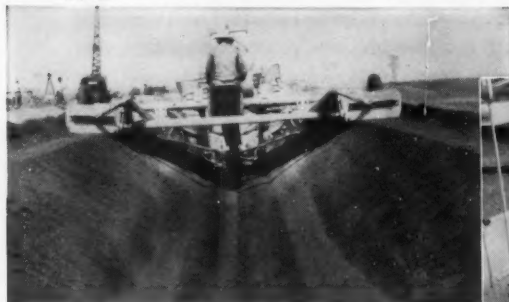
Battery Unit—KSM Products offers portable battery unit to supply independent power for welding studs up to 1/2" base diameter. It is recommended for stud welding where no power lines are available or when existing lines are unable to handle stud-welding current in addition to their regular load. Tap selector switch, calibrated in weld-base diameters, regulates current supply. "Off" position eliminates external terminal short-circuiting when unit is not in use. Output terminals for connections to control box consist of 2 threaded studs and wing nuts; ammeter indicates charging current and circuit-breaker switch protects equipment from excessive input charging current. Twelve heavy-duty wet batteries of 150-ampere-hour rating are kept charged, when connected to 115-volt 60-cycle single-phase AC source (15-ampere line minimum), by integral automatic charger which test-checks open-circuit battery voltage every 10 minutes and charges

when terminal voltage is below normal. Unit is available without wheels or with choice of steel wheels or solid or pneumatic rubber-tired wheels.

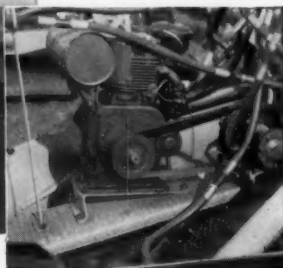
Loader—Pettibone Mulliken Corp., 4700 W. Division St., Chicago 51. "Speed Swing" loader features 180° boom swing which permits discharge of load left or right in addition to front, without moving loader out of loading position line. Loader is available with 2- or 4-wheel drive, optional 4-wheel steer, 3/4 or 1 cu. yd. bucket. Accessory attachments are fork, crane hook, backfiller blade and 4-cu. yd. snow bucket. It has 30° bucket tilt-up. Other features are torque converter transmission system, 15' discharge height over fully raised bucket, 3'3" reach from front tires at 10' dumping height and 5'4" reach at 7' dumping height, forward-reversing lever, hydraulic steering, hydraulic brakes and full hydraulic control, bucket float control, replaceable bucket lip, big flotation tires on all 4 wheels, ball-bearing turntable, heavy-duty axles and full operator visibility.

Control of DITCHER WINGS

Assigned to a **WISCONSIN** HEAVY-DUTY *Air-Cooled* ENGINE



Wisconsin single cylinder engine mounted on Ditcher drives multi-vane hydraulic pump.



Power to Fit the Machine and Job

Here a Wisconsin Air-Cooled Engine drives a Vickers Multi-vane hydraulic pump on a Model 20-60 Chattrin Ditcher, providing dependable control of the Ditcher Blade . . . matching the heavy-duty serviceability of the ditcher itself.

When you are choosing equipment for any job that requires continuous, day-long service . . . either under constant load or heavy-duty variable loads . . . Wisconsin Engines have the Lugging Power that hangs on and the rugged stamina that can "take it". Your Wisconsin-powered equipment is always ready to go, in any weather, in any climate. Power range: 3 to 36 hp.

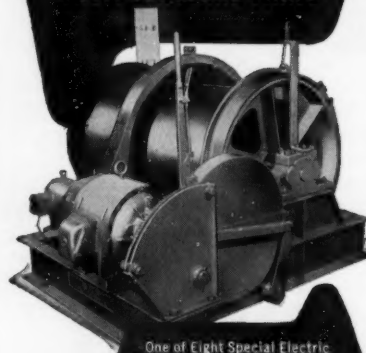
For dependable power performance and low-cost maintenance, specify "Wisconsin Power" for your equipment. Write for Bulletin 5-154.



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World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

Special Hoists FROM STANDARD PARTS



One of Eight Special Electric Incline Hoists with 36" diameter x 26" face drums, built for unbalanced duty of 1,500 lbs. at 200 FPM.

• By modifying and re-combining our standard parts, Superior-Lidgerwood-Mundy can engineer hoists to meet your specific requirements at the lowest possible cost.

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New York Office, 7 Day Street, New York 7, N.Y.

NEW LITERATURE

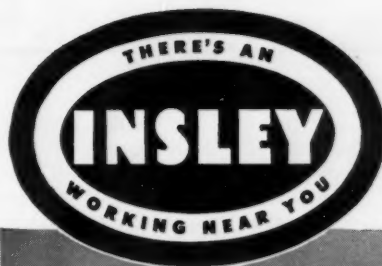
Excavator-Cranes—*Clark Equipment Co., Construction Machinery Division, Benton Harbor, Mich.* Booklet describes air control system on "Michigan" line of excavator-cranes. Illustrated with pictures and drawings, it explains theory and application of air-controlled clutches which are standard equipment on machines. Series of cross-sectional sequence drawings illustrate operation of air control valve. Graphs and tables give comparative figures on time tests between machines equipped with air controls and mechanical controls. Eight reports of actual operating experiences are included.

Earth-Moving Equipment—*Caterpillar Tractor Co., Peoria 8, Ill.* Booklet (Form D411) is another in series of cartoon-style maintenance guides. It takes new county road commissioner through visit to typical earth-moving contractor. They pass from one service specialist to another. Each tells how to care for bulldozers, cable and hydraulic controls, pipe-layers, rippers, scrapers, shovels and wagons. Fine points of adjustment and lubrication are explained.

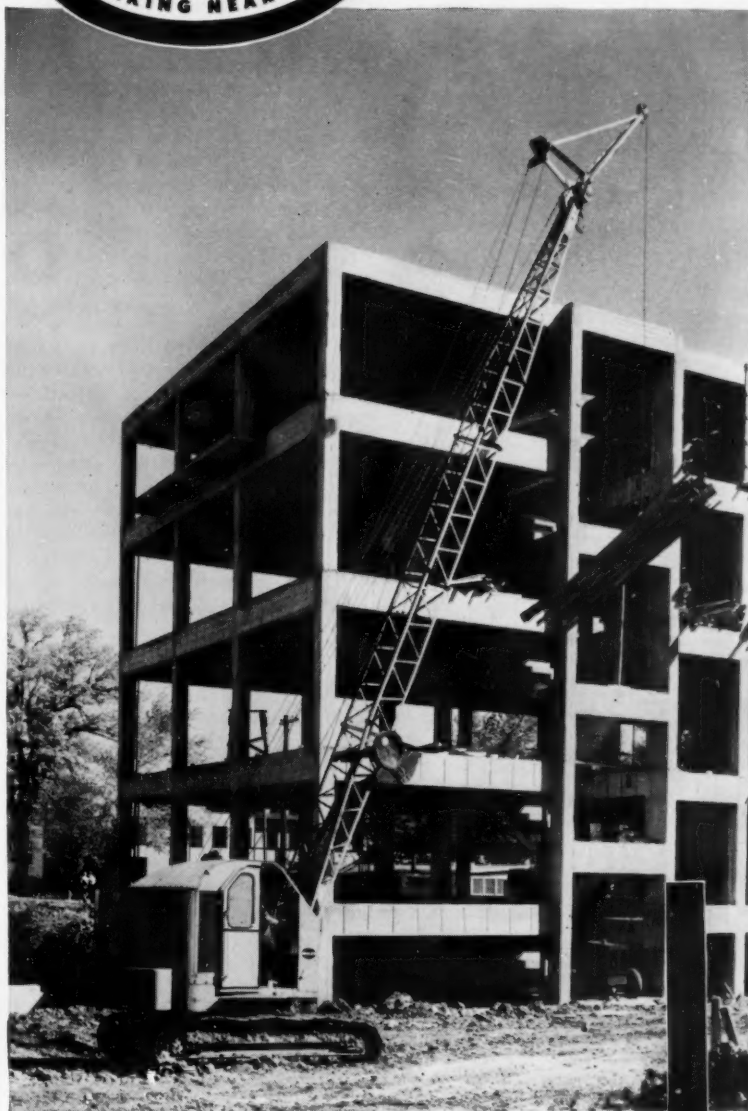
Shovel-Crane—*American Hoist & Derrick Co., St. Paul 1.* Catalog on new Model 750 1½-yd. shovel, 35-ton crane shows action pictures of machine in quarries and gravel plants and handling pulpwood. General specifications are given. Features of machine design are described.

Finishing Machines—*Flexible Road Joint Machine Co., Warren, Ohio.* Portable finishing machines for highway, airport, municipal and special concrete slab finishing are presented in Bulletin P-111. Flex-Plane's "Detroit Special" is shown at work on turnpikes, air strips, etc. Interchangeable screeds are shown. Finishing machine specifications are given.

Grader—*J. D. Adams Manufacturing Co., Indianapolis 6.* Motor Grader No. 660 with 140 h.p. Cummins engine is presented in new bulletin. Front and back covers are devoted to action pictures while inside pages illustrate and describe construction and operating features of machine. Various blade positions are pictured along with detailed view of constant-mesh transmission, full-floating rear axle and detailed engine view. Also described and pictured is variety of optional equipment.



ON A CONSTRUCTION PROJECT



The Insley Line includes excavators and cranes, 5 to 30 ton capacity—rubber or crawler mounted — gasoline, diesel or electric powered. There's an Insley working near you on a construction project.

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wholly owned subsidiary
THE MAXI CORPORATION, LOS ANGELES

Trucks, Scrapers—Euclid Division, General Motors Corp., Cleveland 17. Two catalogs cover 17-yd. bottom dumps and twin-power scrapers. No. 251 on Model TDT 17 cu. yd. struck bottom-dump, gives charts on typical travel speeds and typical grade ability. Features of machine are presented in detail pictures. Brief specifications are included. No. 551 on scrapers shows machines in operation, describes and illustrates operating features and gives specifications.

Compressor—Joy Manufacturing Co., Henry W. Oliver Bldg., Pittsburgh 22. Bulletin A-55 on Joy line of portable air compressors explains operating features and gives detailed descriptions, specifications and illustrations. It describes 2 new sizes of portables, 75 c.f.m. and 125 c.f.m.

Backfiller—The Cleveland Trencher Co., 20100 St. Clair Ave., Cleveland 17. Cleveland Model 190 backfiller, heavy-duty machine for pipeline and other heavy construction projects, is presented in Bulletin S-118. Fea-

tures of machine are presented in brief copy with each feature pointed out on large-scale photo. Complete dimensional drawings and specifications are given.

Rubber Hose and Belting—Carlyle Rubber Co., 62-64 Park Place, New York 7, N. Y. Catalog gives complete information and prices on Carlyle industrial rubber products. It covers various types of hose, conveyor belting, rubber boots, dredging sleeves. Uses of each are briefly explained, specifications are given and couplings are shown.

Insulation—Infra Insulation, Inc., 525 Broadway, New York 12. Illustrated instruction folder discusses construction features and installation techniques of Infra accordion insulation. Diagrams and illustrations demonstrate how to install between wood beams, steel beams and and trusses, around ducts and pipes, on masonry walls, concrete and wood floors and other shallow spaces. It discusses insulating damp cellar walls, crawl spaces, ventilation, vapor formation.

Gradall—Gradall Division, Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3. Booklet contains action pictures, application views, schematic diagrams and cross-sectional and cut-away drawings of Gradall doing variety of earth-moving and construction operations. Design and construction features of machine are covered. Pictures show machine working on 19 types of excavating and earth-moving chores in industrial, residential and highway construction, road maintenance and street repair work, irrigation projects. Description and illustration of 16 boom attachments, listing of specifications, visual charts showing working and lifting capacities and map of company's distributor organization complete book.

Field Office Trailers—Contractors Trailer Co., 97 Eagle St., North Adams, Mass. Booklet presents 1954 trailers. Sketches and photos illustrate features. Full descriptions are given of chassis, floor, body, interior, wiring, heating, doors. Diagram of 35' model is included.

Concrete Pressure Pipe—Price Brothers Co., 1932 E. Monument Ave., Dayton 1, Ohio. Concrete Pressure Pipe Laying Instructions is pocket-size booklet. Each page carries separate step in pipe-laying installation with large on-job photo and brief explanation. Manual contains data on various sized pipes and tells how to dig trench, how to handle pipe, steps in making joint and how to bed pipe. Check list of equipment and supplies needed is included.

Form Board—Owens-Corning Fiberglass Corp., Toledo 1, Ohio. Fiberglass acoustical form board for poured-in-place roof decks for industrial plants, commercial buildings and schools is described in new folder.

Movie on Graders

A full-color sound movie on Adams motor graders has just been released by J. D. Adams Manufacturing Co. The film, about 20 minutes in length, features operating advantages of Adams machines and then shows their application by owners on various types of work in different parts of the country. Showings of the film may be arranged with local Adams dealers.

Servicised Premolded Para-Plastic* for Effective, Low Cost JOINT SEALING

TWO TYPES:

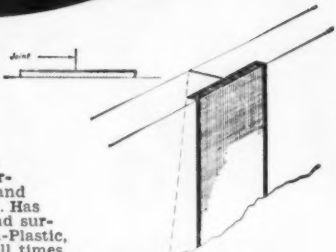
1. PARALATERAL Wide Strip

For sealing vertical construction or expansion joints in Retaining Walls, Abutments, Wing Walls, Foundations, etc., particularly when one side will be backfilled and protection from water seepage is necessary. Has rigid backing of asphalt joint material and surface and both edges coated with Para-Plastic, which maintains bond with concrete at all times.

2. MOLDED STRIP

Para-Plastic Sealing Compound is molded into strips for sealing keyed construction joints and cracks or breaks in vertical concrete surfaces. Concrete poured against the strip, after setting up, will bond with strip to form watertight seal.

Write for complete details on Servicised Products for the construction industry. See our Catalog in Sweet's.



*Para-Plastic is one of the many Patented products developed by Servicised Products Corp. for the construction industry.



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MANUFACTURERS' NOTES

Fred T. Wiggins has been elected vice president—commercial of UNIVERSAL ATLAS CEMENT CO. James C. McClure has been named vice president and general sales manager. Henry C. Schmielau, currently comptroller, has been elected to the additional office of vice president. Mac H. Hull has been appointed assistant to president and W. Owen Lawrence has been made general operating manager. Elmer C. Martin has been appointed assistant to Vice President McClure and Harry T. Swanson has been named manager of the Atlas White Cement Bureau, succeeding Mr. Martin.

W. B. Greene has resigned as president of BARBER-GREENE CO. and has become chairman of the board of directors. H. A. Barber succeeds him as president. The following officers have been elected: S. E. Faircloth, vice president, production coordinator, E. H. Holt, vice president, director of sales, J. D. TURNER, vice president, director of publicity and promotion, H. E. Herting, vice president, comptroller, R. C. Heacock, vice president, director of manufacturing and engineering, J. M. Spence, treasurer, W. A. Greene, secretary, Urban Hipp, assistant treasurer, F. J. Merrill, assistant secretary.

C. I. Bohmer has been named assistant to the general manager of the LE ROI-TRANSO truck-mounted mixer division at Dunkirk, Ohio.

R. P. McKenrick, manager, Construction Equipment Department, BLAW-KNOX CO., has been elected chairman of the Manufacturers Division of the National Sand and Gravel Association.

Louis B. Neumiller has been elected chairman of the board of CATERPILLAR TRACTOR CO. Harmon S. Eberhard has been elected president to succeed Mr. Neumiller. Harry H. Fair, who resigned the board chairmanship, will continue as a director.

Ernest W. Christener has been appointed manager of the reinforcing department for the Chicago plant of JOSEPH T. RYERSON & SON, INC. He was formerly sales manager of the department.

Arthur M. Grasse has been elected vice president in charge of industrial products of GOODMAN MANUFACTURING CO.

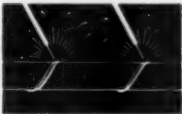
PREFACE TO ALASKAN POWER



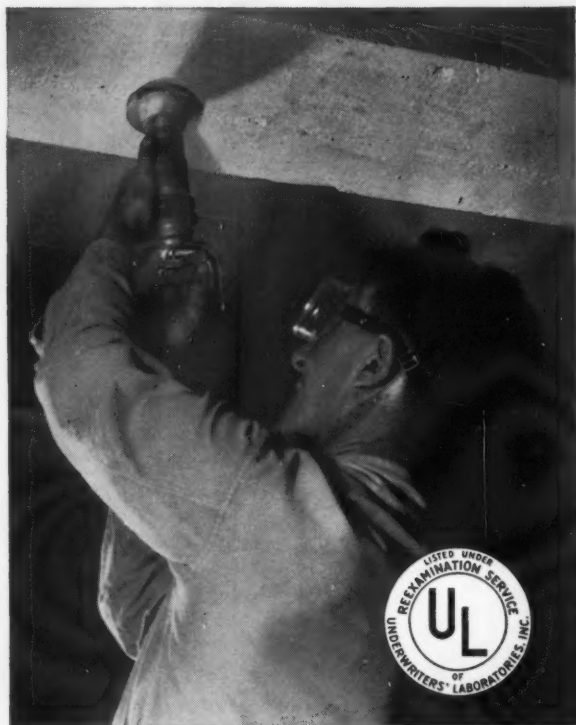
Naylor light-weight pipe is right at home on construction jobs like this dredging operation which is paving the way for hydro-electric power in Alaska.

This distinctive lockseam-spiralwelded pipe provides the extra strength for heavy duty service, yet its light-weight assures easy handling and installation.

Find out today how well Naylor pipe can fit into your operations—whether you need high or low pressure air or water lines. Ask for Bulletin No. 507.

NAYLOR  **PIPE**

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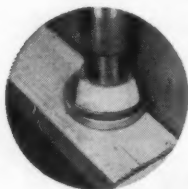


DRIVE a better bargain in bid competition with the safer, action-packed **VELOCITY-POWER DRIVER**

Because getting the job done faster, for less, is important in today's bid competition, the speed and safety advantages of the Velocity-Power Driver are vital in your contracting picture.

With this tool, fastening and anchoring jobs are finished in seconds! Just load, position, fire! Job's done. Interchangeable barrels let you drive either 1/4-inch or 3/8-inch studs from same firing unit. Wide selection of studs—and cartridges and studs are integral to eliminate time-wasting matching and fitting.

Safety features include a spring-loaded safety arm that prevents accidental discharge; permanently attached spall-shield; center-fire cartridges; color-keyed cartridges to assure right load for job; and a barrel design that avoids flash, ricochet, recoil. Write for details.



← Spall-shield can be retracted, or a portion of shield rotated out of the way for easier work in narrow spaces or close-to-the-wall jobs.

ALSO AVAILABLE

Velocity-Power Driver with separate spall-shield for extensive work in deeply recessed areas.

VELOCITY POWER TOOL CO.

201 NORTH BRADDOCK AVENUE

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ADVERTISERS' PRODUCTS

Manufacturers' addresses are listed on page 116

Airplanes

Aero Design and Engineering Co.

Asphalt Joint Sealer

Servicised Products Corp.

Asphalt Plants (Portable)

Barber-Greene Co.
Iowa Mfg. Co.

Awnings (Aluminum)

Kawneer Co.

Axles (Truck)

Eaton Manufacturing Co.

Backfillers

Bucyrus-Erie Co.
Cleveland Trencher Co.
Harnischfeger Corp.
Parsons Co.
Unit Crane and Shovel Corp.

Batchers

Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.

Bearings (Anti-Friction, Tapered Roller)

Hyatt Bearings Division
Timken Roller Bearing Co.

Belted

Carlyle Rubber Co.

Bins

Blaw-Knox Division
L. Burmeister Co.
Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.

Bits (Detachable Drill)

Joy Manufacturing Co.
Timken Roller Bearing Co.

Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)

Shunk Manufacturing Co.

Blasting Accessories

American Cyanamid Co.

Bridges

American Bridge Division
Armco Drainage & Metal Products

Buckets (Clamshell & Dragline)

Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Owen Bucket Co.
Wellman Engineering Co.

Buckets (Concrete)

Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
Insley Manufacturing Corp.
Owen Bucket Co.

Buildings

Allied Structural Steel Cos.
American Bridge Division
Armco Drainage & Metal Products
Luria Engineering Co.
Macomber, Inc.
Truscon Steel Division

Bulldozers

LeTourneau-Westinghouse Co.

Car Pullers

Clyde Iron Works
Superior-Lidgerwood-Mundy Corp.

Cement (Common and Special)

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Universal Atlas Cement Co.

Cement (White)

Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)

Dixon Valve & Coupling Co.

Column Forms

DesLauriers Column Mould Co.

Compressors

Allis-Chalmers Co.
Joy Manufacturing Co.
LeRoi Co.

Concrete Mixers, Pavers, Tampers

Chain Belt Co.
Construction Machinery Co.
Foote Construction Equipment Division
Jaeger Machine Co.
Knickerbocker Co.
Koehring Co.
Kwik-Mix Co.
T. L. Smith Co.
Worthington Corp., Construction Equipment Division

Concrete Slab Void Tubes

Sonoco Products Co.

Concrete Vibrators

Concrete Surfacing Machinery Co.
Electric Tamper & Equipment Co.

Conveying Machinery

Barber-Greene Co.
Chain Belt Co.
Iowa Mfg. Co.
Joy Manufacturing Co.

Cranes

Austin-Western Co.
Bucyrus-Erie Co.
Clark Equipment Co., Construction Machinery Division
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.

ADVERTISERS' PRODUCTS

Inley Manufacturing Corp.
Koehring Co.
Manitowoc Engineering Corp.
Northwest Engineering Co.
Thew Shovel Co.
Unit Crane and Shovel Corp.

Crushing Machinery
Allis-Chalmers Co.
Austin-Western Co.
Iowa Mfg. Co.

Culverts
Albert Pipe Supply Co.
Armco Drainage & Metal Products

Cutters (Abrasive)
Wodack Electric Tool Corp.

Decking (Roof Steel & Aluminum)
Macomber, Inc.

Derricks
Clyde Iron Works

Doors (Metal, Wood)
Ceco Steel Products Corp.
Kawneer Co.
Kinnear Mfg. Co.
R. C. Mahon Co.
Truscon Steel Division

Dredging Machinery
Harnischfeger Corp.
Northwest Engineering Co.

Drills & Drilling Machinery
Bucyrus-Erie Co.
Joy Manufacturing Co.
Salem Tool Co.
Timken Roller Bearing Co.

Drills (Electric)
Wodack Electric Tool Corp.

Electric Plants
Kohler Co.

Elevators (Material)
Chain Belt Co.
Iowa Mfg. Co.

Engines
Allis-Chalmers Tractor Div.
American Hoist & Derrick Co.
Caterpillar Tractor Co.
Continental Motors Corp.
Detroit Diesel Engine Division
Harnischfeger Corp.
International Harvester Co.
Kohler Co.
LeRoi Co.
Reo Motors, Inc.
Waukesha Motor Co.
Wisconsin Motor Corp.

Expansion Joints
Laclede Steel Co.
Servicised Products Corp.

Explosives
American Cyanamid Co.

Facing (Aluminum)
Kawneer Co.

Fasteners (For Steel, Concrete)
Velocity Power Tool Co.

Financing
C.I.T. Corp.

Finishing Machines (Bituminous)
Barber-Greene Co.

Finishing Machines (Concrete)
Blaw-Knox Division

Flooring
Truscon Steel Division

Forms (Concrete) and Accessories
Blaw-Knox Division
Economy Forms Corp.
Heltzel Steel Form & Iron Co.
Joseph T. Ryerson & Son, Inc.
Sonoco Products Co.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.
Walton Plywood Co.

Generating Sets (Electric)
Caterpillar Tractor Co.

Graders
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Allis-Chalmers Tractor Div.
Austin-Western Co.
Caterpillar Tractor Co.
Euclid Division
Galion Iron Works & Mfg. Co.
Koehring Co.

Gravel Plants (Portable)
Iowa Mfg. Co.

Grinders (Electric)
Wodack Electric Tool Corp.

Hammers (Electric)
Wodack Electric Tool Corp.

Hoists
American Hoist & Derrick Co.
Clyde Iron Works
Construction Machinery Co.
Harnischfeger Corp.
Joy Manufacturing Co.
Superior-Lidgerwood-Mundy Corp.

Hose (Air, Water, Steam, Suction)
Carlyle Rubber Co.

Industrial Financing
C.I.T. Corp.

Insurance (Automobile, Casualty, Compensation, Liability)
Aetna Casualty & Surety Co.
American Casualty Co.
Central Surety & Insurance Corp.
Employers Mutuals of Wausau

Joists (Steel)
Ceco Steel Products Corp.
Laclede Steel Co.
Macomber, Inc.

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Waterloo, Iowa
ESSICK MANUFACTURING CO.
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THE GORMAN-RUFF COMPANY
Mansfield, Ohio
THE JAEGER MACHINE COMPANY
Columbus, Ohio

LEYMAN MANUFACTURING COMPANY
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FOOD MACHINERY & CHEMICAL CORP.
Peerless Pump Division
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RICE PUMP & MACHINE COMPANY
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STERLING MACHINERY COMPANY
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WORTHINGTON CORPORATION
Concrete Machinery Division
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Barber-Greene Co.

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Gulf Oil Corp.

Menders (Hose)

Dixon Valve & Coupling Co.

Mixers (Truck)

Blaw-Knox Division
Chain Belt Co.

Mixing Plants

Blaw-Knox Division
L. Burmeister Co.
Butler Bin Co.
Chain Belt Co.
C. S. Johnson Co.

Mortar (Masonry)

Lehigh Portland Cement Co.

Nipples (Hose)

Dixon Valve & Coupling Co.

Pan Forms (Concrete)

Gateway Erectors, Inc.

Partitions (Steel, Load-Bearing)

Macomber, Inc.

Pile Drivers

American Hoist & Derrick Co.
Austin-Western Co.
Bucyrus-Erie Co.
Harnischfeger Corp.
Joy Manufacturing Co.
McKiernan-Terry Corp.
Northwest Engineering Co.
Thew Shovel Co.
Vulcan Iron Works

Piling (Steel)

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Allied Structural Steel Cos.
American Bridge Division
Armco Drainage & Metal Products
Bethlehem Steel Co.
L. B. Foster Co.
Union Metal Manufacturing Co.

Pipe

Albert Pipe Supply Co.
Armco Drainage & Metal Products
L. B. Foster Co.
Laclede Steel Co.
Naylor Pipe Co.
Universal Concrete Pipe Co.
Universal Sewer Pipe Corp.

Plywood

Walton Plywood Co.

Pumps (Contractors')

Barnes Mfg. Co.
C.H.&E. Mfg. Co.
Carver Pump Co.
Chain Belt Co.
Construction Machinery Co.
Essick Manufacturing Co.
Gorman-Rupp Co.
Griffin Wellpoint Corp.
Jaeger Machine Co.
Leyman Mfg. Corp.
Marlow Pumps
Novo Engine Co.
Peerless Pump Division
Rice Pump & Machine Co.
Sterling Machinery Corp.
Worthington Corp., Construction Equipment Division

Pumps (Jetting)

Gorman-Rupp Co.
Griffin Wellpoint Corp.

Quantity Surveyors

H. A. Sloane Associates

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Austin-Western Co.
Iowa Mfg. Co.

Rail

L. B. Foster Co.

Railway Equipment & Track Material

L. B. Foster Co.
Wisconsin Motor Corp.

Reinforcement Accessories

Economy Forms Corp.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.

Reinforcing Steel and Mesh

American Bridge Division
Bethlehem Steel Co.
Ceco Steel Products Corp.
Connors Steel Division
Laclede Steel Co.
Joseph T. Ryerson & Son, Inc.
Truscon Steel Division

Rollers

Austin-Western Co.
Blaw-Knox Division
Euclid Division
Galion Iron Works & Mfg. Co.

Roof Deck (Steel)

Allied Structural Steel Cos.
Ceco Steel Products Corp.
R. C. Mahon Co.
Truscon Steel Division

Rope (Wire)

American Hoist & Derrick Co.
Joseph T. Ryerson & Son, Inc.

Sash (Metal, Wood)

William Bayley Co.
Hope's Windows, Inc.
Truscon Steel Division

Scaffolding (Sectional Steel, Tubular Steel)

Patent Scaffolding Co.

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Austin-Western Co.

Scrapers

Austin-Western Co.
Caterpillar Tractor Co.
Euclid Division
Galion Iron Works & Mfg. Co.
LeTourneau-Westinghouse Co.

Screens (Sand, Gravel & Coal)

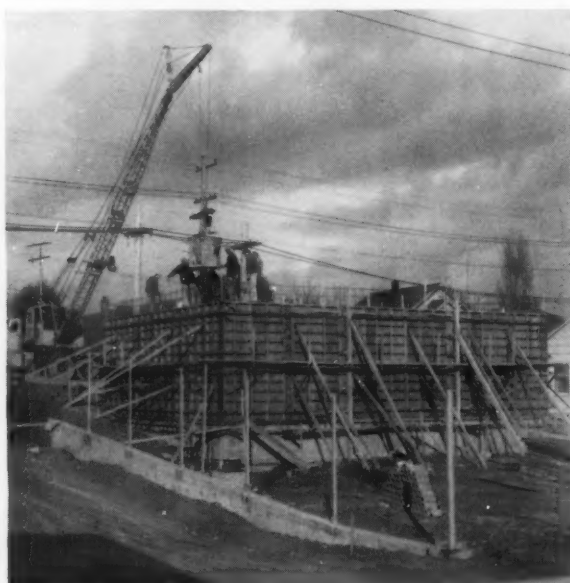
Iowa Mfg. Co.

Shores

Patent Scaffolding Co.
Symons Clamp & Mfg. Co.

Shovels (Power)

American Hoist & Derrick Co.
Austin-Western Co.
Bucyrus-Erie Co.
Butler Bin Co.
Clark Equipment Co., Construction Machinery Division
Harnischfeger Corp.
Insley Manufacturing Corp.



First of four rectifier buildings for City Light, Seattle.
C & R Builders, Seattle and Alaska, Gen. Con.

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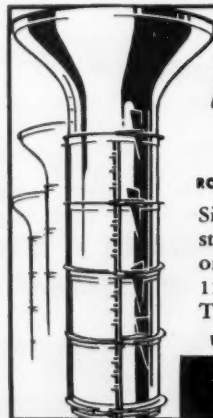
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